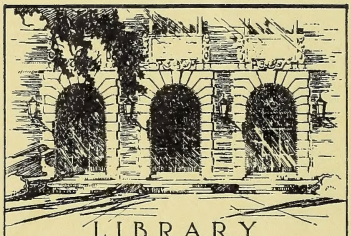

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BULLETIN

OF THE

UNIVERSITY OF DELAWARE

VOLUME XVI NEW SERIES NUMBER 3

APRIL, 1921

ANNUAL CATALOGUE

1920-1921

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PUBLISHED QUARTERLY BY THE UNIVERSITY

NEWARK, DELAWARE

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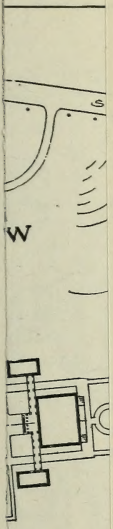

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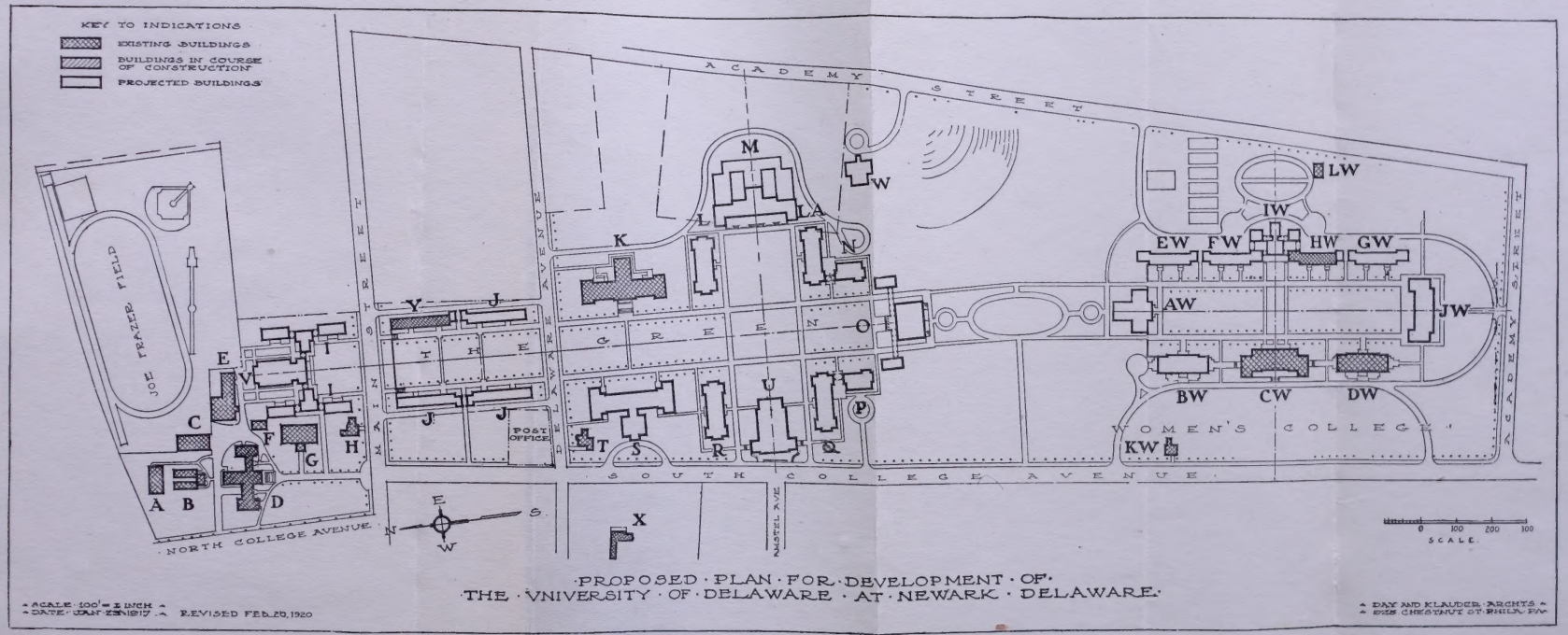

PROPOSED GROUP PLAN FOR THE DEVELOPMENT OF THE UNIVERSITY OF DELAWARE

MEN'S COLLEGE

A.	Old Heating Plant.	J-J-J-.	Dormitories.	R.	Social Science.
B.	Greenhouses.	K.	Wolf Hall—Agriculture.	S.	Liberal Arts.
C.	Gymnasium.	L.	Physics.	T.	Infirmary.
D.	Old College.	LA.	Recitation Building.	U.	Auditorium.
E.	Mechanical Hall.	M.	Engineering Building.	V.	Proposed Gymnasium.
F.	Board of Health Laboratory.	N.	Unassigned.	W.	New Power Plant.
G.	Recitation Hall.	O.	Library.	X.	President's Home.
H.	Purnell House.	P.	Administration Building.	Y.	Harter Hall.
I-I.	Fraternity House Group.	Q.	English.		

WOMEN'S COLLEGE

A-W.	Y. W. C. A.	H-W.	Sussex Hall.
B-W.	College Hall.	I-W.	Common and Social Hall.
C-W.	Science Hall.	J-W.	Unassigned.
D-W.	Residence Hall.	K-W.	Practice Home.
E-W. F-W. G-W.	Dormitories.	L-W.	Old Heating Plant.

CATALOGUE

OF THE

UNIVERSITY OF DELAWARE

1920-1921

WITH

ANNOUNCEMENTS FOR 1921-1922

PUBLISHED BY THE UNIVERSITY

NEWARK, DELAWARE

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1921-1922

CALENDAR

1921		
January 3	Monday	Christmas recess ends, 1.00 p. m.
January 20-29		Mid-Year Examinations
January 31	Monday	Second term begins, 8.00 a. m.
February 19	Saturday	Meeting of the Trustees, 10.30 a. m.
March 24	Thursday	Easter recess begins, 4.00 p. m.
March 29	Tuesday	Easter recess ends, 8.00 a. m.
June 3-10		Final Examinations
June 11	Saturday	Meeting of the Trustees, 10.30 a. m.
		Class Day—Alumni Day—Alumnae Day
June 12	Sunday	Baccalaureate Sermon, 11.00 a. m.
June 13	Monday	Commencement Day
June 15, 16		Examinations for Admission

June 27	Monday	Summer School for Teachers opens
August 5	Friday	Summer School for Teachers closes

September 20, 21		Examinations for Admission
September 19, 20, 21		Re-examinations
September 22	Thursday	Registration Day for Freshmen and Sophomores
September 23	Friday	Registration Day for Juniors and Seniors
		Convocation Exercises, 3 p. m.
November 23	Wednesday	Thanksgiving recess begins, 11.50 a. m.
November 28	Monday	Thanksgiving recess ends, 1.00 p. m.
November 29	Tuesday	Meeting of the Trustees, 10.30 a. m.
December 23	Friday	Christmas recess begins, 11.50 a. m.
1922		
January 3	Tuesday	Christmas recess ends, 1.00 p. m.
Jan. 27-Feb. 4		Mid-Year Examinations
February 6		Second term begins, 8.00 a. m.
February 18	Saturday	Meeting of the Trustees, 10.30 a. m.
April 13	Thursday	Easter recess begins, 11.50 a. m.
April 20	Thursday	Easter recess ends, 1.00 p. m.
June 2-9		Final Examinations
June 10	Saturday	Meeting of the Trustees, 10.30 a. m.
		Class Day—Alumni Day—Alumnae Day
June 11	Sunday	Baccalaureate Sermon, 11.00 a. m.
June 12	Monday	Commencement Day
June 14, 15		Examinations for Admission

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TRUSTEES

Ex-Officio

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The President of the State Board of Education,
George B. Miller, Wilmington
The Master of the State Grange, Jacob H. Rosa, Milford
The President of the College, Walter Hullihen

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Charles B. Evans, Esq., Newark..... 1894
William T. Lynam, Esq., Wilmington..... 1897
Charles S. Conwell, Camden..... 1897
Daniel W. Corbit, Odessa..... 1899
L. Heisler Ball, M. D., Marshallton..... 1900
W. Watson Harrington, Esq., Dover..... 1900
Samuel H. Messick, Bridgeville..... 1902
James E. Dutton, Seaford..... 1904
John Biggs, Esq., Wilmington..... 1905
Samuel H. Derby, Woodside..... 1905
Thomas Davis, Esq., Wilmington..... 1908
Samuel J. Wright, Newark..... 1910
Edward D. Hearne, Esq., Georgetown..... 1910
Henry Ridgely, Esq., Dover..... 1911
Charles M. Curtis, Esq., Wilmington..... 1911
Everett C. Johnson, Dover..... 1911
Henry B. Thompson, Greenville..... 1912
Eben B. Frazer, Newark..... 1913
H. Rodney Sharp, Wilmington..... 1915
W. H. Heald, Esq., Wilmington..... 1915
Edward A. Evans, Cheswold..... 1916
Charles R. Miller, Wilmington..... 1917
H. F. du Pont, Winterthur..... 1918
Harry Cannon, Bridgeville..... 1918
Henry P. Scott, Delaware City..... 1920

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CHARLES R. MILLER
H. F. DU PONT
CHARLES M. CURTIS
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GEORGE B. MILLER

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THOMAS DAVIS

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Professor of Military Science and Tactics

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Associate Professor of Bacteriology and Biology

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REINHOLD EUGEN SALESKI, A. M.
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Assistant Professor of Modern Languages

RAYMOND WATSON KIRKBRIDE, S. B.
Assistant Professor of Modern Languages

THOMAS DARMORE SMITH, S. B.
Assistant Professor of Mathematics

MAMIE E. ROHR, A. M. *Assistant Professor of Education*

CARL JOHN REES, A. B. *Assistant Professor of Mathematics*

CHARLES RAYMOND RUNK, S. B.
Assistant Professor of Agronomy

MARION ETHEL WATSON *Director of Physical Education*

RACHEL TAYLOR *Director of Fine and Industrial Arts*

JOHN LINTON COYLE *Instructor in Shop Work*

ORLISTA LILLIAN DIKEMAN, S. B., *Instructor in Home Economics*

LEO BLUMBERG, E. E. *Instructor in Engineering*

DOROTHY WOLFF, A. B. *Instructor in Biology*

DORA WILCOX *Instructor in Music*

MIRIAM ELLEN NULL, A. B. *Instructor in Home Economics*

BOUSSON DAVISON, S. B. *Instructor in Horticulture*

AGNES SNYDER *Instructor in Education*

ERNEST CANFIELD VANKEUREN, A. B. *Instructor in English*

ALLAN CARRUTH WILLIAMS, S. B.
Instructor in Animal Husbandry

WILLIAM FRANCIS LINDELL, S. B. *Instructor in Engineering*

CARL SEIB RANKIN, C. E.
Instructor in Civil and Electrical Engineering

ADA WILLIM, S. B. *Assistant in Chemistry*

RAYMOND MELVILLE UPTON, S. B.
Director of Division of Rehabilitation

OTHER OFFICERS

Secretary of the Faculty, Dean E. L. Smith
Acting Registrar, Dean E. L. Smith
Secretary to the President, Helen Steele
Secretary to the Dean, Tevis Miller
Secretary to the Dean of Agriculture, Florence Colbert
Secretary to the Dean of the Women's College, Gertrude Sturges
Acting Librarian, Professor W. O. Sypherd
Assistant Librarian, Dorothy L. Hawkins
Assistant in Library, Eleanor E. Todd
Assistant in Library, Mabel Armstrong

Business Administrator, Arthur G. Wilkinson
Assistant to the Business Administrator, Alberta Heiser
Assistant to the Business Administrator, Edwina Long
Superintendent of Grounds and Buildings, D. Lee Rose
Director of the Commons, Natalie Betts
Matron of the Women's College, Sarah Churchman

STANDING COMMITTEES

ADMISSION: Professor Dutton, *Chairman;* Dean McCue, Professor M. V. G. Smith, Assistant Professor Brinton.

ADVANCED STANDING: Dean Smith, *Chairman;* Dean McCue, Professor M. V. G. Smith.

ATHLETICS: Faculty Representatives on the Athletic Council—Dean Smith, *President;* Professor Dutton, *Vice President;* Director of Athletics, Mr. Shipley, *Manager.*

COLLEGE HOUR: Professor Miller, *Chairman;* Professor Vaughn, Professor Wilkinson.

EXTENSION: Assistant Professor Kirkbride, *Chairman;* Professor Vaughn, Professor Wilkinson.

GRADUATE STUDIES AND RESEARCH: Professor Vaughn, *Chairman;* Professor M. V. G. Smith, Professor Sypherd, Professor Manns, Professor Miller, Professor Drake, and the Deans, ex officio.

LIBRARY: Professor Sypherd, *Chairman;* Professor Harter, Professor Penny, Professor Houghton, Professor Palmer.

PRIZES AND SCHOLARSHIPS: Professor Conover, *Chairman;* Professor Sypherd, Professor Preston, Professor Schuster.

PUBLICATIONS: Professor Sypherd, *Chairman;* Dean McCue, Associate Professor Foster, Assistant Professor Saleski.

PUBLICITY: Assistant Professor Kirkbride, *Chairman;* Dean McCue, Professor Conover, Assistant Professor Runk, Assistant Professor Rees.

SCHEDULE: Associate Professor Foster, *Chairman;* Professor Wilkinson, Professor Preston, Associate Professor Tiffany.

SCHOLARSHIP AND DISCIPLINE: Dean Smith, *Chairman;* Professor Vaughn, Professor M. V. G. Smith, Professor Dutton, Dean McCue, Professor Thoroughgood.

STUDENT ENTERTAINMENTS AND ORGANIZATIONS: Professor Dutton, *Chairman;* Dean Smith, Professor Heim, Assistant Professor Kirkbride, Major Row.

STUDENT SCHEDULES: Arts and Science—Dean Smith, *Chairman;* Professor Conover, Professor Vaughn. Agriculture—Dean McCue, *Chairman;* Professor Baker, Professor Schuster. Engineering—Professor M. V. G. Smith, *Chairman;* Professor Koerber, Professor Thoroughgood, Professor Penny.

STUDENT SELF-HELP: Professor Hancock, *Chairman;* Professor Miller, Associate Professor LeCato.

The Standing Committees of the Faculty of the Women's College will be found in the Women's College section of this catalogue.

THE UNIVERSITY OF DELAWARE

The University of Delaware is situated at Newark, a town of 2600 inhabitants, about half way between Philadelphia and Baltimore on the main lines of the Pennsylvania and Baltimore and Ohio Railroads running from New York to Washington. The climate is equable; the surrounding country is attractive; and the town itself has all modern improvements, including an excellent supply of artesian well water and a complete sewerage system.

FOUNDATION

Delaware College was chartered as a private college by an Act of the Delaware Legislature in 1833, and it was first opened to students in May, 1834. With the college was merged the old Newark Academy, a preparatory school founded in 1767. This merger continued until 1869. As a result of a succession of misfortunes the college was closed from 1859 to 1870. It was reopened in 1870, having meanwhile been designated by an Act of the Delaware Legislature as beneficiary under the Act of Congress known as the "Morrill Bill," which apportioned to each of the several states large areas of public lands to form the basis of endowments for colleges which must include in their curriculum the teaching of Agriculture, the Mechanic Arts, and Military Tactics. The college was thus under combined private and State ownership until 1913, when it came into the sole possession of the State. In 1921, by an Act of the Legislature, the name of the college was changed to the University of Delaware. The Women's College was established by the State in 1914. The Board of Trustees consists of 28 members, together with the Governor of the State, the

President of the University, the Master of the State Grange, and the President of the Board of Education, all of whom are members ex officio.

GROUNDS AND BUILDINGS

The grounds of the University comprise a tract of 88 acres in the heart of Newark, and a farm of 217 acres, used for purposes of instruction and experimentation. As the result of the purchase for the University in 1915 by Mr. Pierre S. du Pont of the large tract of land lying between the original campus of Delaware College and the campus of the Women's College, the University now has ample space for future development.

The buildings of the University are as follows:

Old College, a beautiful example of colonial architecture; the remodeled original building of Newark College with its several additions. In the remodeling of this building in 1917 the brick shell of the old structure was retained, the interior being entirely rebuilt out of fireproof material. This building is the social centre of student life. It contains the Commons, the Lounge, Rooms for Student Meetings and Organizations, etc. The Faculty Club is also located here, its rooms in the East Wing having been attractively furnished through the generosity of H. Rodney Sharp, of the class of 1900.

Recitation Hall, a three-story brick building erected by the State in 1892 and used, as its name implies, mainly for lecture and recitation rooms. The Administration Offices are at present located in this building.

Mechanical Hall, a two-story brick building erected by the State in 1904, and containing now the offices, Lecture Rooms, Drawing Rooms, and Shops of the Division of Mechanical Engineering.

The Gymnasium, a one-story brick building erected by the State in 1905, and containing in addition to the main exercise floor, showers, swimming pool, and the office of the Physical Director.

Purnell Hall, a small house, originally the home of a branch of the Evans family; later used successively as a Chapter House for the Kappa Alpha Fraternity, as a home for the Y. M. C. A., and as a General Library, and now containing the offices of the staff of the Department of English.

Elliott Hall, a stone-and-brick structure purchased from the Elliott family, and now used largely for residence apartments for members of the teaching staff.

The Library, a two-story brick building providing a temporary home for the General Library.

Harter Hall, the first of the new dormitories which are to be erected on that part of the campus lying between Main Street and Delaware Avenue. This dormitory, erected in 1917, was designed to accommodate 59 students. It was named in honor of George A. Harter, President of the College from 1896-1914.

Temporary Engineering Buildings, three one-story frame structures erected in 1920 to provide temporary housing for the Divisions of Civil and of Electrical Engineering.

Wolf Hall, a magnificent building erected in 1917 for the School of Agriculture, and named in honor of Theodore R. Wolf, Professor of Chemistry from 1871-1907. Several of the Departments of Pure Science are also housed in this building. Wolf Hall, Harter Hall, and Old College represent architecturally and physically the beginning of the University of Delaware as projected by the Alumni, and thus far realized largely through the generosity of a citizen of Delaware, Pierre S. du Pont.

The Infirmary, a two-story brick dwelling converted by the Trustees in 1916 into a hospital for the students of the college. It is under the direct superintendence of a trained nurse.

The Buildings of the Women's College, consisting of

Residence Hall, which contains rooms for sixty-three persons, a dining hall, and reception rooms.

Science Hall, in which the classrooms and laboratories are located.

Sussex Hall, a dormitory which accommodates seventy-three persons.

The Practice House, a private residence which has been furnished for use as a practice house for the students in the Division of Home Economics.

Two temporary buildings which were built in 1920 to provide for the overflow of new students.

SCOPE OF THE WORK

The University embraces the following departments of activity:

For Men

The School of Arts and Science
The School of Agriculture
The School of Engineering

The Rehabilitation Department

For Women

The Women's College, comprising

The School of Arts and Science
The School of Education
The School of Home Economics

For Men and Women

Agricultural Extension
Academic Extension
The Summer School

The Agricultural Experiment Station

REQUIREMENTS FOR ADMISSION

GENERAL REGULATIONS

Candidates for admission to the Freshman class must be at least 16 years of age and of good moral character. They must (1) be graduates of standard four-year high or preparatory schools, or (2) have spent four full years as students in such schools, and in addition sustain examinations at the University in *all* subjects which they present for entrance. The examinations are given on the days prescribed in the calendar of the University. All candidates, whether they are graduates of high schools or not, are required to present 15 units as entrance credits.

Students should enter at the beginning of the first term. Applicants will not be permitted to enter the University after the beginning of the first term, unless they have completed an amount of work equivalent to the work already done by the classes which they wish to enter.

All applications and credentials should be sent to the Committee on Admission before August 1. Those not received by this time will not be acted upon by the Committee until after September 1.

The requirements for admission to the Women's College are given in the Women's College section of this Catalogue.

SPECIFIC REQUIREMENTS

Fifteen units are required for entrance.

A unit, according to a statement formulated by the National Conference Committee on Standards of Colleges and Secondary Schools, represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. This definition applies to all subjects except English,

in which four years' work counts for three units. A four-year secondary school curriculum should be regarded as representing not more than sixteen units of work.

The foregoing statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute periods or their equivalent.

REQUIRED UNITS FOR ADMISSION TO SCHOOLS OPEN TO MEN

	Arts and Science Units	Engineering Units	Agriculture Units
English (4 years)	3	3	3
Mathematics—			
Algebra	1½	1½	1
Plane Geometry	1	1	1
Solid Geometry*	..	½	..
Foreign Language**	2	2	2
History	1	1	1
Science	1	1	1
	9½	10	9

*Applicants for admission to the School of Engineering who have not completed Solid Geometry must take it in college without credit.

**Latin, Greek, French, German, and Spanish. All applicants except graduates from Smith-Hughes high schools must present two units in one foreign language or be conditioned. This requirement may not be satisfied by the presentation of one unit in one language and one unit in another language.

ADDITIONAL UNITS REQUIRED FOR ADMISSION TO SCHOOLS OPEN TO MEN

Additional units sufficient to bring the total number up to 15 must be offered from the following list:

Foreign Languages	
Greek	2 units
Latin	2 units
French	2 units
German	2 units
Spanish	2 units
History	
Ancient	1 unit
Medieval and Modern	1 unit or 2 units
English	1 unit
American	½ or 1 unit
Civics	½ unit
Science	
Botany	½ or 1 unit
Chemistry (See Note 5)	½ or 1 unit
Physics (See Note 5)	½ or 1 unit
Physical Geography	½ or 1 unit
Physiology	½ unit
Zoology	½ or 1 unit
Biology	½ or 1 unit
General Science	1 unit
Vocational Subjects	See Note 4
Drawing	1 unit or 2 units

Note 1. Candidates for the degree of Bachelor of Arts must offer four years of Ancient Language (4 units of Latin, or 2 units of Latin and 2 units of Greek) for entrance, or complete in college what they lack of this requirement.

Note 2. All candidates for admission are examined in English Composition in order to test their abil-

ity to do the required English of the Freshman year. Examinations are held in June and September. Candidates are advised to take the examinations in June. Those who fail will have the opportunity of working privately on the subject during the summer or of taking a course in English in the six weeks' Summer Session.

Note 3. Applicants who present a Modern Foreign Language for entrance will be required to take a test given by the Modern Language department in order that they may be placed in the class in which they are qualified to do satisfactory work. This test will not affect the value of their credits in the subject in so far as entrance is concerned. Conditions in Foreign Languages must be made up by means of additional work in college.

Note 4. Elective units in vocational subjects to the number of three will be accepted from graduates of the four-year Smith-Hughes High School course. Graduates from this course may also substitute two units from the list on page 22 for the regular entrance requirements in Foreign Language.

Note 5. Chemistry and Physics should include laboratory work and experiments by the pupil in accordance with national standards. Where such laboratory and experiment work has *not* been done, only ½ unit of entrance credit will be given for the year's work in the subject.

DETAILED EXPLANATION OF THE REQUIREMENTS FOR ADMISSION

The following detailed explanation of the requirements for admission is based on Bulletin 96, published by the College Entrance Examination Board. It is intended as a guide to those high school teachers who wish to give the best preparation possible to pupils who expect to go to college, and also as a means by which they may be aided in their efforts to bring their own courses to the highest possible point of effectiveness. In place

of the textbooks named in this explanation, other textbooks covering equivalent ground may be substituted.

ENGLISH

Candidates should be prepared in accordance with the following requirements:*

(1) Habits of correct, clear, and truthful expression. This part of the requirement calls for a carefully graded course in oral and written composition, and for instruction in the practical essentials of grammar, a study which ordinarily should be reviewed in the secondary school. In all written work constant attention should be paid to spelling, punctuation, and good usage in general as distinguished from current errors. In all oral work there should be constant insistence upon the elimination of such elementary errors as personal speech-defects, foreign accent, and obscure enunciation.

(2) Ability to read with intelligence and appreciation works of moderate difficulty; familiarity with a few masterpieces. This part of the requirement calls for a carefully graded course in literature. Two lists of books are provided from which a specified number of units must be chosen for reading and study. The first, designated as the A List, contains selections appropriate for the earlier years in the secondary school. These should be carefully read, in some cases studied, with a measure of thoroughness appropriate for immature minds. The second, designated as the B List, contains selections for the closer study warranted in the later years. The progressive course formed from the two lists should be supplemented, at least by home reading on the part of the pupil and by classroom reading on the part of pupils and instructor. It should be kept constantly in mind that the main purpose is to cultivate a fondness for good literature and to encourage the habit of reading with discrimination.

THE A LIST

From each group two selections are to be made, except that for any book in Group V a book from any other may be substituted.

Group I. Dickens: A Tale of Two Cities; George Eliot: Silas Marner; Scott: Quentin Durward; Stevenson: Treasure

*These requirements represent, with slight changes in phrasing, the "Requirements under the Restrictive Plan" for 1923, 1924, and 1925 as adopted by the National Conference on Uniform Entrance Requirements. The entrance examinations in 1921 and 1922 will be based on the old plan as outlined in the catalogue for 1919-1920.

Island or Kidnapped; Hawthorne: The House of the Seven Gables.

Group II. Shakespeare: Merchant of Venice; Julius Cæsar; King Henry V; As You Like It.

Group III. Scott: The Lady of the Lake; Coleridge: The Ancient Mariner; and Arnold: Sohrab and Rustum. A collection of representative verse, narrative and lyric. Tennyson: Idylls of the King (any four); The Aeneid or The Odyssey in a translation of recognized excellence, with the omission, if desired, of Books I—V, XV, and XVI of The Odyssey.

Group IV. The Old Testament (the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther); Irving: The Sketch Book (about 175 pages); Addison and Steele: The Sir Roger de Coverley Papers; Macaulay: Lord Clive; Parkman: The Oregon Trail; Franklin: Autobiography.

Group V. A modern novel; a collection of short stories (about 150 pages); a collection of contemporary verse (about 150 pages); a collection of prose writings on matters of current interest (about 150 pages); two modern plays. All selections from this group should be works of recognized excellence.

THE B LIST

One selection is to be made from each group.

Group I. Shakespeare: Macbeth, Hamlet.

Group II. Milton: L'Allegro, Il Penseroso, and either Comus or Lycidas; Browning: Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Herve Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus," Instans Tyrannus, One Word More.

Group III. Macaulay: Life of Johnson; Carlyle: Essay on Burns, with a brief selection from Burns' Poems; Arnold: Wordsworth, with a brief selection from Wordsworth's Poems.

Group IV. Burke: Speech on Conciliation with America; a collection of orations, to include at least Washington's Farewell Address, Webster's First Bunker Hill Oration, and Lincoln's Gettysburg Address.

Examination

The examination will test powers of correct, clear, truthful expression, the faithfulness with which the candidate has read and studied the books in the A List and the B List. The candi-

date will write one or more compositions several paragraphs in length. The subjects may be suggested in part by the books in the A List, but a sufficient number from other sources will make it possible for the candidate to draw upon his own experience and ideas. He will not be expected to compose at a more rapid rate than three hundred and fifty words an hour, but his work must be free from common errors in grammar, idiom, spelling, and punctuation, and should show that he understands the principles of unity and coherence. In addition, questions may be asked on the practical essentials of grammar, such as the construction of words and the relation of various parts of a sentence to one another. The candidate will be expected to have an intimate knowledge of the books in the B List.

He will be required to submit a statement certified by his principal specifying what books he has read during his secondary school course, and indicating the quality and character of his spoken English.

HISTORY AND CIVIL GOVERNMENT

In each of the subjects except Civil Government, the following preparation is required:

1. Historical instruction in a high school or academy for one year to the extent specified in the definition of the Unit of Admission Requirements.

2. The study of an accurate historical textbook, in which not less than 500 pages of text are devoted to the particular subject.

3. Collateral reading of appropriate selections, in books of a less elementary nature, amounting to at least 500 pages.

4. The ability to compare historical characters, periods, and events, and in general the power to combine in orderly fashion the results of reading, and to exercise judgment as well as memory.

5. The ability to locate places historically important and to describe territorial changes and other historical movements on an outline map, acquired from the study of physical as well as political geography with the aid of map work.

ANCIENT HISTORY

One Unit

This course should devote one-half of the year to the study of the history of the ancient Orient and of Greece as far as the death of Alexander and the break-up of his empire, with the study of Western Hellas to the death of Timoleon. The second half-year should be devoted to the study of the history of Rome

as far as the death of Charlemagne. During this half-year time should be found for the study of the Hellenistic Period of Greek history and the merging of the story of Greece with the story of Rome.

MEDIEVAL AND MODERN HISTORY

ONE UNIT

The broad plan of this course should be to devote one-quarter of the year's work to the period prior to about 1300 A. D., closing with the death of Pope Boniface VIII; the second quarter should carry forward to about 1660, closing with the readjustments in the treaties of Westphalia and of the Pyrenees; the third quarter should close with the Congress of Vienna in 1815; and the fourth quarter should be adjusted so as to give the last half of the time to events since 1878, with the purpose of explaining clearly the causes and the issues of the war of 1914.

MODERN HISTORY

ONE UNIT

After a brief survey of the international and colonial developments since the age of discovery, the course should begin with a cross-section of the governmental, social, and cultural conditions in Europe about 1660 A. D. The absolute monarchy of Louis XIV, the parliamentary government of England, the enlightened despotism of Frederick the Great, and the republican government of Revolutionary France and the imperialism of Napoleon should be studied as types of government in the transition from medieval feudalism to present-day democracy. Attention should be given to the growth of national states and to the leading international and colonial problems since 1660 which culminate in the British Empire with its self-governing dominions, the partition of Africa, the awakening of the Far East, and the great international rivalries of the present generation. Emphasis should be laid upon the Industrial Revolution—its political and social aspects—and some attention should be given to the leading features of the internal history of England, France, and Germany. The study of the last century should include some account of the great material changes, important inventions, and intellectual, social, and humanitarian movements.

ENGLISH HISTORY

ONE UNIT

The division of the work between the two half years should be made at about 1660. During the first half-year, the periods of the early Plantagenets (Henry II and Edward I), of the

Tudors, and of the early Stuarts should receive emphasis. In the second half-year, starting with the Restoration, attention should first be given to the continued struggle between Crown and Parliament, culminating in the establishment of responsible government. The great wars with France, the imperial policy of England, and the great revolution in agriculture, industry, and transportation, should also be carefully studied, as well as the economic, social, and political life. In general, it is desirable to emphasize the important epochs and the greater movements rather than to give each reign equal stress.

AMERICAN HISTORY*

One Unit

The course in American history should be so arranged that the work of the first half-year will include the administration of John Quincy Adams, whereas that of the second half-year will include events of recent occurrence. In the work of the first half-year considerably more time should be spent on the period from 1763 to 1829 than on the period from early time to 1763; and in the work of the second half-year more time should be given to the period since the Civil War than to that before.

For the guidance of both teachers and students the following suggestions are made:

1. That such topics as the routes of the principal discoverers and explorers, the resulting claims and settlements, campaigns of the principal wars, and territorial growth of the United States be studied primarily as map work.

2. That the European background should be given particular attention during the colonial period and during the national period to 1823.

3. That the various attempts at colonial union, the experiments in federal government, and the growth of federal power be especially emphasized.

4. That too much time should not be given to the topics of slavery, secession, and the reconstruction period. Instead, special attention should be paid to territorial expansion, and social and industrial growth.

5. That special importance should be accorded the policy of the United States in foreign affairs, tariff, banking, civil service, currency, corporation control, conservation of national resources, capital and labor, and other present day problems.

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* Teachers who desire a list of suggested topics for study in this course should consult Bulletin No. 96 of the College Entrance Examination Board.

6. That familiarity with the lives of great Americans should be especially encouraged.

CIVIL GOVERNMENT*

ONE-HALF UNIT

Civil government in the United States (national, state, and local), its constitution, organization, and actual working.

The candidate will be expected to show such knowledge of the field as may be acquired from the study of a good textbook of not less than 300 pages, supplemented by collateral reading and discussion.

For the guidance of both teacher and student the following list of topics is suggested:

1. The purpose of government, including prevention of crime, care of dependents, preservation of public health, education, taxation, conservation of natural resources, immigration, and control of commerce.
2. The division of power and of activities among federal, state, and local governments.
3. The federal government: its organization and working.
4. State government: its organization, scope, and problems.
5. Local government, with special attention to the forms and problems of municipal government.
6. Parties: their function and organization; the machinery of nomination and election.
7. Attempts at reform: initiative and referendum, recall, short ballot, etc.

Note.—The above named list of topics is not intended to be exhaustive, but rather to suggest such representative topics as should be included in the school course.

AMERICAN HISTORY AND CIVIL GOVERNMENT

ONE UNIT

Candidates who wish to offer American history and civil government should devote approximately two-thirds of the allotted time to the study of American history, and one-third to the study of civil government. How this division of time should be arranged must be left to the experience of the individual teachers, since the practice has been found to vary so widely that no general direction can be given.

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* Teachers who desire a list of suggested topics for study in this course should consult Bulletin No. 96 of the College Entrance Examination Board.

In the time devoted to the study of American history, the course should cover lightly the period of discovery and settlement and the colonial period to 1763. The period from 1763 to 1837 should be covered with care. In the same way less emphasis may be placed upon the period from the end of the administration of Andrew Jackson to 1865, in order that time may be found to stress the period since the Civil War.

In the time devoted to the study of civil government the student should make a careful study of the Constitution of the United States, of the federal government, its powers, organization and workings; should understand the relations between the state and the federal government, and the general nature and extent of the powers reserved to the states.

LATIN

Amount and Range of the Reading Required

(1) The Latin reading, without regard to the prescription of particular authors and works, should be not less in amount than Caesar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-VI.

(2) The amount of reading specified above should be selected by the schools from the following authors and works: Caesar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

Suggestions Concerning Preparation

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—just as it stands; the sentence should be read and understood in the order of the original, with the full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded, and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

GREEK

Grammar: The inflections; the simpler rules for composition and derivation of words; syntax of cases and the verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive. One-half unit

Elementary Prose Composition, consisting principally of detached sentences to test the candidate's knowledge of grammatical construction. One-half unit

Xenophon: The first four books of the Anabasis. One unit

Homer-Iliad, I-III: The first three books of the Iliad (omitting II, 494-end), and the Homeric construction, form, and prosody. One unit

Prose Composition, consisting of continuous prose based on Xenophon and other Attic prose of similar difficulty. One-half unit

Sight Translation of Attic Prose of no greater difficulty than Xenophon's Anabasis.

Xenophon and Sight Translation of Prose.

Homer—Iliad, I-III, and Sight Translation of Homer.

ELEMENTARY FRENCH

(First and Second Years)

TWO UNITS

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax.

3. Abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

4. The reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences (the teacher giving English) and in reproducing from memory sentences previously read.

5. Writing French from dictation.

During the second year the work should comprise:

1. The reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches.

2. Constant practice, as in the previous year, in translating into French easy variations upon the texts read.

3. Frequent abstracts, sometimes oral and sometimes written, of portions of the texts already read.

4. Writing French from dictation.

5. Continued drill upon the rudiments of grammar, with constant application in the construction of sentences.

6. Mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

GERMAN

Elementary German (First and Second Years)

TWO UNITS

During the first year the work should comprise:

1. Careful drill upon pronunciation.

2. The memorizing and frequent repetition of easy colloquial sentences.

3. Drill upon the rudiments of grammar, that is upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order.

4. Abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

5. The reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise:

1. The reading of from 150 to 200 pages of literature in the form of easy stories and plays.

2. Accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages.

3. Continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his or her knowledge with facility in the formation of sentences, and, secondly, to state his or her knowledge correctly in the technical language of grammar.

SPANISH

Elementary Spanish (First and Second Years)

TWO UNITS

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax.

3. Abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

4. The reading of about 100 pages of graduated texts, with constant practice in translating into Spanish easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read.

5. Writing Spanish from dictation.

6. Memorizing of Spanish passages of conversational prose and of simple verse.

During the second year the work should comprise:

1. The reading of about 200 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches.

2. Constant practice, as in the previous year, in translating into Spanish easy variations upon the texts read.

3. Frequent abstracts, sometimes oral and sometimes written, of portions of the texts already read.

4. Continued study of the elements of grammar and syntax, and the use of a composition-book.

5. Mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses.

6. Writing Spanish from dictation.

7. Memorizing of Spanish passages of conversational prose and of simple verse.

MATHEMATICS

Elementary Algebra

ONE AND ONE-HALF UNITS

The four fundamental operations for rational algebraic expressions.

Factoring, determination of highest common factor and lowest common multiple by factoring.

Fractions, including complex fractions, and ratio and proportion.

Linear equations, both numerical and literal, containing one or more unknown quantities.

Problems depending on linear equations.

Radicals, including the extraction of the square root of polynomials and of numbers.

Exponents, including the fractional and negative.

Quadratic equations, both numerical and literal.

Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations.

Problems depending on quadratic equations.

PLANE GEOMETRY

ONE UNIT

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurements of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of lines and plane surfaces.

SOLID GEOMETRY

ONE-HALF UNIT

The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of surfaces and solids.

PHYSICS

One Unit

1. The course of instruction in Physics should include:

(a) The study of one standard text-book, for the purpose of obtaining a connected and comprehensive view of the subject.

(b) Instruction by lecture-table demonstrations, to be used mainly for illustration of the facts and phenomena of physics in their qualitative aspects and in their practical applications.

(c) Individual laboratory work consisting of experiments requiring at least the time of 30 double periods, two hours in the laboratory to be counted as equivalent to one hour of classroom work. The experiments performed by each student should number at least 30.

The aim of laboratory work should be to supplement the pupil's fund of concrete knowledge and to cultivate his power of accurate observation and clearness of thought and expression. The exercises should be chosen with a view to furnishing forceful illustrations of fundamental principles and their practical applications.

2. Throughout the whole course special attention should be paid to the common illustrations of physical laws and to their industrial applications.

3. In the solution of numerical problems, the student should be encouraged to make use of the simple principles of algebra and geometry to reduce the difficulties of solution.

CHEMISTRY

One Unit

The following requirement has been planned so as to make it equally suitable for the instruction of the student preparing for college and for the student not going beyond the secondary school.

The candidate's preparation in chemistry should include:

(1) Individual laboratory work, comprising at least forty exercises.

(2) Instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

(3) The study of at least one standard text-book, to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry.

BIOLOGY, BOTANY, ZOOLOGY*

ONE UNIT EACH

These courses should be developed on the basis of laboratory study guided by definite directions. This should be supplemented by the careful study of at least one modern elementary text-book. At least one-half of the time should be devoted to the practical studies of the laboratory. Pupils should be encouraged to do supplementary work in the field of natural history, especially if good nature studies have not preceded the high school course. A note-book, with carefully labeled outline drawings of the chief structures studied anatomically, with notes on demonstrations, and in explanation of drawings, with descriptions of experiments, with dates and with index, should be prepared by the pupil in connection with practical work.

PHYSICAL GEOGRAPHY

ONE UNIT

The most essential facts and principles of physical geography should be studied in the class room and laboratory. The order of presentation is not essential in general in the order given.

The field of physical geography in secondary schools includes (1) the earth as a globe, (2) the ocean, (3) the atmosphere, and (4) the land. Each topic should be treated so as to show its causal relations to other topics, and, so far as possible, the effects of earth features on life conditions should be emphasized.

DRAWING

Freehand Drawing

ONE UNIT

The pupil's preparation in freehand drawing should be directed toward training him in accurate observation and in definite and truthful representation of form, without attempt to represent color or color values.

The pupil should learn to draw correctly and with lines of good quality simple form in correct perspective in the size in which it is felt in the plane of the drawing, or larger or smaller.

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* High school teachers who wish helpful suggestions for the work of these courses should consult Bulletin No. 96 of the College Entrance Examination Board.

It is recommended that pupils should be taught to draw from the object itself rather than from the flat.

Correctness of proportion and accuracy in the angles and curves and structural relations of the parts of every object drawn are of the highest importance.

The elementary principles of perspective are to be thoroughly learned and the pupil should be able to apply them in freehand drawing from the object or from the imagination.

Mechanical Drawing

ONE UNIT

In the time available for mechanical drawing in most secondary schools, only very elementary courses in the subject should be undertaken, and thoroughness in fundamentals should be the main feature of such courses. Thus, for example, instead of requiring the pupil to make elaborate drawings, inked, tinted, and shaded, the effort should be, first of all, to teach him the correct methods of making drawings in pencil. Teachers of mechanical drawing should be particularly watchful during the early part of a course to insist that the pupil use only the correct methods. Likewise, in the study of any form of projection, the object should be to understand the fundamental principles rather than to make elaborate drawings. Work which is merely copying or which can be done only by depending constantly upon help from the instructor is not the kind of training desired. A course in mechanical drawing should be one in the application of fundamental principles and not one in copying.

PHYSIOLOGY

ONE-HALF UNIT

A college preparatory course in Physiology should include a study (1) of the structure of the human body, both gross and minute, and (2) of the general use of the various tissues and organs of the body and their relation to one another. In the first instance, the structure of the body should be studied by beginning with the smallest units of structure, the cells. Then the pupil should learn their form and structure and how they are formed into tissues and organs, and also the reasons for grouping certain organs into systems. The physiology of the body systems should cover the science in a general way. No attempt should be made to have the pupil assimilate a mass of detail and experimental facts, but rather to have him become familiar with the general phases of the role played by the various organs and systems in the body economy.

ADMISSION TO ADVANCED STANDING

Candidates for entrance to an advanced class in any of the courses are required either to sustain examinations in all studies of the course up to the point at which they seek admission, or to present from other colleges certificates covering such studies.

Schedule of Entrance Examinations

Entrance examinations will be held at the college in Newark on Wednesday and Thursday, June 15 and 16, 1921; also on Tuesday and Wednesday, September 20 and 21, 1921.

English—1.00-2.30, Thursday, June 16, and Wednesday, September 21.

Modern Language—3.00-4.30, Thursday, June 16, and Wednesday, September 21.

Mathematics—9.00-12.30, Thursday, June 16, and Wednesday, September 21.

History—1.00-4.30, Wednesday, June 15, and Tuesday, September 20.

Latin 9.00-10.30, Wednesday, June 15, and Tuesday, September 20.

Greek and Physics—10.30-12.30, Wednesday, June 15, and Tuesday, September 20.

Hours for examinations in other subjects will be arranged for with the candidates who offer such subjects.

SCOPE OF THE INSTRUCTION

The University offers instruction to candidates for degrees in the following schools:

FOR MEN

Arts and Science: Business, Education, History and Economics, Languages and Literature, Science, Mathematics.

Agriculture: Agronomy, Animal Husbandry, Horticulture

Engineering: Civil, Mechanical, Electrical, Chemical

FOR WOMEN

The Women's College: Arts and Science, Education, Home Economics

Opportunity is offered to students of sufficient maturity and preparation, who do not wish to pursue a four-year course leading to a degree, to pursue special studies determined by some definite end in view. Such special students are required to take at least 5 three-hour subjects or their equivalent.

Changes between Schools of Instruction. Changes from one School of Instruction to another may be made only at the opening of a term, with the approval of the Faculty and the consent of the parent or guardian.

REQUIREMENTS FOR GRADUATION

The specific requirements for graduation are presented in detail in the respective statements of the Schools of Instruction.

School of Arts and Science

Faculty

WALTER HULLIHEN, Ph. D. *President*
EDWARD LAURENCE SMITH, A. M. *Dean*
Professor of Modern Languages and Literatures
GEORGE ABRAM HARTER, Ph. D. *Professor of Mathematics*
ELISHA CONOVER, A. M.
Professor of Ancient Languages and Literatures
CLINTON OSBORNE HOUGHTON, A. B. *Professor of Biology*
WILBUR OWEN SYPHERD, Ph. D. *Professor of English*
CHARLES LYNDALL PENNY, A. M., Sc. D. *Professor of Chemistry*
EARNEST VANCOURT VAUGHN, Ph. D.
Professor of History and Political Science
CHARLES CONGER PALMER, S. M., D. V. M.
Professor of Bacteriology and Hygiene
GEORGE ELLIOTT DUTTON, A. M. *Professor of English*
WILLIAM ALBERT WILKINSON, A. M.
Professor of Education and Psychology
CARLETON FRIEND MILLER, Ph. D. *Professor of Chemistry*
GUY ERWIN HANCOCK, S. M. *Professor of Physics*
RALPH B. HARRIS, S. B. *Professor of Business Administration*
JOHN MARVIN LECATO, A. M.
Associate Professor of Bacteriology and Biology
WILSON LLOYD BEVAN, Ph. D. *Associate Professor of History*
HAROLD EDWARD TIFFANY, S. M.
Associate Professor of Chemistry
FINLEY MELVILLE KENDALL FOSTER, Ph. D.
Associate Professor of English
REINHOLD EUGEN SALESKI, A. M.
Assistant Professor of Modern Languages
GEORGE ELDER BRINTON, Ph. B.
Assistant Professor of Modern Languages and Literatures
RAYMOND WATSON KIRKBRIDE, S. B.
Assistant Professor of Modern Languages and Literatures
CARL JOHN REES, A. B. *Assistant Professor of Mathematics*
ERNEST CANFIELD VANKEUREN, A. B. *Instructor in English*

SCOPE OF THE WORK

The work of this school is designed to meet the requirements of a liberal education and to lay the foundation for professional and business careers. In accordance with this general aim considerable freedom in the choice of studies is allowed. The subjects to be taken by Freshmen are, for the most part, prescribed.

Requirements for Graduation

Candidates for graduation are required to complete 128 credit term-hours of work in addition to Military Science.

In addition to fulfilling these specific requirements, candidates for graduation must also attain the grade of B or better in at least 50 per cent of the prescribed number of credit term-hours of work.

Graduates from the School of Arts and Science who have offered for admission four years of Latin or Greek, or who have completed in college an equivalent amount of work in those subjects will receive the degree of Bachelor of Arts; all other graduates will receive the degree of Bachelor of Science.

Prescribed Subjects

	Credits
English	16
History	12
Mathematics	8
Modern Languages	12
Science (Bacteriology, Botany, Chemistry, Mineralogy and Geology, Physics, Physiology or Zoology)	12
	60
Military Science	12

FRESHMAN YEAR

First Term	H.*	C.
English, 1	3	3
History, 1	3	3
Language—Latin, French, or German	3	3
Mathematics	4	4
Elective—One subject: (Botany, Chemistry, Greek, Latin, Physiology)	–	3
		16
Military Science	3	1.5
		17.5

Second Term	H.	C.
English, 2	3	3
History, 2	3	3
Language—Latin, French, or German	3	3
Mathematics	4	4
Elective—One subject: (Botany, Chemistry, Greek, Latin, Physiology)	–	3
		16
Military Science	3	1.5
		17.5

SOPHOMORE, JUNIOR, AND SENIOR YEARS

At the beginning of the Sophomore year, every candidate for the degree of Bachelor of Arts or Bachelor of Science shall select from the following list a major study, in which he shall complete thereafter 18 hours of work.

During these three years students must take, in addition to the required work in Military Science, all prescribed subjects not completed in the Freshman year and elective courses sufficient to make a total of thirty credit term-hours each year.

Major Electives

Bacteriology, Physiology, and Hygiene
Biology
Business Administration
Chemistry
Education
English
French or German
Greek or Latin
History
Mathematics
Physics

* The capital letters H. and C. refer to Actual Hours and Credit Hours, respectively.

ELECTIVE COURSES

	1st Term	2nd Term
Ancient Languages, 1, 2, 3, 4, 5, 6, 7, 8	3	3
Ancient Languages, 21, 22, 23, 24, 31, 32	3	3
Bacteriology, 1 and 2	3	3
Bacteriology, 3	3	
Biology, 1, 2, 3, 4	3	3
Biology, 5, 6	2	2
Biology, 7, 8	3	3
Biology, 9, 10	2 or 3	2 or 3
Biology, 11, 12	2	2
Business, 1, 2, 3, 4	3	3
Business, 5, 6, 7, 8	3	3
Business, 9, 10	3	3
Chemistry, see pages 51-56		
Education, 3	3	–
Education, 8	–	3
English, 11	3	–
English, 15, 16	3	3
English, 27, 20	3	3
English, 34	–	3
History, 13, 14	3	3
History, 21 and 22	3	3
History, 29 and 30	3	3
Horticulture, 33	3	–
Hygiene, 3 and 4	1	1
Mathematics, 5, 6	4	4
Mathematics, 9 and 10	3	3
Mathematics, 13	2	–
Geology, 31, 32	3	3
Modern Languages, see pages 69-73		
Physics, 1, 2	3	3
Physics, 3, 4	1.5	1.5
Physics, 10	–	3.5
Physiology, 1, 2	3	3
Psychology, 1, 2	3	3
Sociology, 1, 2	3	3

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Ancient Languages and Literatures

PROFESSOR CONOVER

Throughout the course the aim is to enable the student to acquire facility and quickness in reading at sight and familiarity with the ancient order of thought. Word-meaning is fixed by inspecting form, derivation, and comparison with synonyms. The authors are selected with a view to their representative character. The public and private life of the Greeks and Romans and their influence on modern literature and civilization are continually kept before the minds of the students. English derivatives and words kindred to all Indo-European tongues are frequently noted, and the general principles of comparative philology are explained and applied.

In addition to the department library, which contains the Delphini edition of Latin writers, the Attic orators and dramatists, etc., the department of classical philology in the general library is steadily growing. It contains bound volumes of the American Journal of Philology and of the Harvard Studies in Classical Philology. The American Journal of Philology is kept on file in the reading room.

LATIN

AL 1 and 2 Cicero, De Senectute and De Amicitia. Ovid, Metamorphoses, etc. Prose Composition.
Six credit hours

AL 3 and 4 Livy, 21st or 22d Book. Horace, Odes, Epodes, Satires, Epistles. Prose Composition.
Six credit hours

AL 5 and 6 Tacitus, Germania and Agricola. Plautus, Captives and Trinummus. Juvenal, Satires.
Six credit hours

AL 7 and 8 Seneca, Tragedies or Moral Essays. Terence, Adelphoe and Andria. Quintilian, Books X and XII. Lectures on Latin Literature and Inscriptions.
Six credit hours

GREEK

AL 21 and 22 White's First Greek Book. Anabasis, I, II.
Six credit hours

AL 23 and 24 Anabasis III, IV. Homer, Iliad, I-III. Herodotus VII, VIII.
Six credit hours

AL 25 and 26 Lysias, Orations. Plato, Apology and Crito. Aristophanes, Plutus or Clouds.
Six credit hours

AL 27 and 28 Demosthenes, Orations. Lucian, Dialogues. Aeschylus, Prometheus Bound.
Six credit hours

AL 29 and 30 Greek Prose Composition.
Four credit hours

AL 31 and 32 Greek Testament.
Four credit hours

Bacteriology, Physiology and Hygiene

PROFESSOR PALMER AND ASSOCIATE PROFESSOR LECATO

The aim of this department is to give the student a knowledge of the fundamentals of bacteriology, point out the relation of bacteriology to the life of man and to prepare him for more

advanced work in applied bacteriology. The instruction in physiology aims to acquaint the student with the structures of the body and the rôle of these various structures in the economy. Special emphasis is given to the study of the physiology of nutrition in order to acquaint the student with the requirements of the body for energy, repair, and the conservation of health. The work in hygiene has for its object a study of the fundamental cause of disease and the prevention of disease. Agricultural students are offered a special course in animal hygiene dealing with the more common diseases of live stock. Students are taken on occasional trips to the College Farm and neighboring farms where they may see sick animals and observe modern approved methods for the handling of such cases.

BACTERIOLOGY

Ba 1 and 2 General Bacteriology. A study of the form, structure, distribution, and the properties of bacteria and the relation of bacteria to animal and plant life. In the laboratory the student will be instructed in the technique necessary for practical work in bacteriology. Both saprophytic and pathogenic organisms will be studied. It is recommended that students complete the course in general physiology before taking this course. Required of Juniors in Agriculture and elective for Juniors and Seniors in Arts and Science.

Six credit hours

Ba 3 Advanced Bacteriology. (Prerequisite: Ba 1 and 2.) A lecture and laboratory course, including an advanced study of the bacteria related to animal life and effects of such organisms upon the body tissues. The course also includes a study of natural and artificial immunity. Elective for Seniors in Agriculture and Arts and Science.

Three credit hours

PHYSIOLOGY

Phy 1 Physiology of Digestion, Metabolism, and Nutrition. This course considers the general structure and chemical composition of the body, together with

the formation of tissues, organs, and systems. Following this the processes of digestion, absorption, metabolism, and nutrition are studied in detail. In the laboratory the student will carry out in the test tube digestive processes similar to those occurring in the body.

Three credit hours

Phy 2 Physiology of Respiration, Circulation, Etc. (Prerequisite: Phy 1.) This course is a continuation in the study of general and special physiology and deals with circulation, respiration, excretion, special sense organs, and the glands of internal secretion.

Three credit hours

HYGIENE

Hyg 2 Animal Hygiene and Pathology. A study of the methods of preserving the health of farm animals, including the chief sporadic and infectious diseases of live stock, their symptoms, diagnosis, and means of control. It is recommended that students taking this course should have completed the courses in General Physiology and Bacteriology. Required of Juniors in Agriculture.

Three credit hours

Hyg 3 and 4 Hygiene and Sanitation. Instruction in this subject covers the principles of sanitation, the cause, methods of spread and prevention of epidemics, and the various methods of disinfection. Required of Juniors in Civil Engineering and elective for Arts and Science students.

Two credit hours

GRADUATE WORK

The Bacteriology and Hygiene laboratories receive a considerable amount of material for diagnosis and study. Such material offers excellent opportunity for advanced study and research. Properly qualified

undergraduates and graduates may arrange with the Head of the Department for work of this kind.

Biology

Professor Houghton and Associate Professor LeCato

The aim of biological instruction is to give the student some knowledge of the various living things by which he is surrounded, and to develop habits of careful observation and comparison. Most of the time devoted to this work is spent in careful study in the laboratory, which is supplied with simple and compound microscopes, reference works, microtome, reagents, etc. There is also an excellent collection of illustrative specimens and charts.

B 1 and 2 Elementary Zoology. A study of variations in the structure and life history of the different classes of animals, their habits, and relations. The student secures a general knowledge of the principles of classification based upon the evolution of the animal kingdom, and the principles of Zoology. Selected types of the principal groups of animals, from Protozoa to Mammalia, of which dissections, drawings, and notes are required, are studied in the laboratory. The course gives a comprehensive view of the science of Zoology to the student taking no further work, and forms a basis for advanced work. One recitation or lecture and four hours of laboratory work a week. Required of Juniors in Agriculture. Elective for Arts and Science students.

Six credit hours

B 3 and 4 Systematic and Economic Zoology. (Prerequisite: B 1 and 2.) In this course the student becomes acquainted with a large number of our common vertebrates and learns something of their structure, life histories, habits, and economic importance. Much attention is given to the work of tracing typical specimens, representing as many groups as possible, of Fishes, Batrachians, Reptiles, Birds, and Mammals, by means of keys which are based largely upon struc-

tural characters. Thus the student gains a clear idea of the relations of forms and the characters upon which classifications are based. Dissections are made when necessary to understand and properly use the keys. Four hours of laboratory work a week. Elective for students in Arts and Science and in Agriculture.

Four credit hours

B 5 and 6 Economic Entomology. A course treating of the more important injurious insects of orchard, garden, and field crops, also the insect pests of domestic animals and the household. The work deals with their structure, life histories, and descriptions, and the most approved methods for their control. The most important forms are placed before the class for careful examination and comparison. Special emphasis is laid upon the necessity for the ready determination of species. Two recitations or one recitation and two hours of laboratory work a week. Elective for students in Arts and Science and in Agriculture.

Four credit hours

B 7 and 8 General Botany. As is indicated by its title, this is a general course in botany which aims to give the student a comprehensive idea of the subject as a whole. The topics to which particular attention is given in the first term are as follows: Seeds and seedlings; roots, stems, and leaves; the morphology, evolution, and taxonomy of the Thallophyta, Bryophyta, and Pteridophyta. In the second term the principal topics are as follows: The Gymnospermae; winter buds; the flower and fruit of the higher seed plants; the morphology and taxonomy of the Angiospermae; ecology, and economic botany. One recitation or lecture and four hours of laboratory work a week. Required of Freshmen in Agriculture. Elective for Arts and Science students.

Six credit hours

B 9 and 10 Systematic and Economic Botany. (Prerequisite: B 7 and 8.) A course dealing with economic plants other than staple crops and ornamentals. It includes studies of plants poisonous to man and poisonous or injurious to live stock; medicinal plants and their cultivation; collection and preparation of plants for the drug trade; weeds, their dispersal and eradication, etc. This course is designed especially to meet the needs of Pre-Medical students and those in the course in Agriculture who wish to pursue further studies in botany. One recitation or lecture and two or four hours of laboratory work a week.

Four or six credit hours

B 11 and 12 Systematic and Economic Entomology. (Prerequisite: B 5 and 6.) An advanced course in entomology dealing with the structure, habits and economic importance of insects not studied in B 5 and 6. Considerable time will be devoted to disease-transmitting forms, and to a study of laboratory methods in economic entomology. Field work in studying and collecting insects will be required and the student will be expected to prepare a representative collection of insects, which will become his property when the course is completed. Four hours of laboratory work a week.

Four credit hours

Business Administration

PROFESSOR HARRIS

The courses included in this department have been selected with a view to covering the subjects which are of greatest value to the man engaged in business activity.

Bus 1 and 2 Economics. A foundation course in the principles of Economics, both theoretical and practical, designed as a foundation for, and required as a prerequisite to all other Business courses except Business 9 and 10. The history, structure, and develop-

ment of economic activity; modern production, money, labor and other phases of human relationships. Open to Juniors and Seniors.

Six credit hours

Bus 3 and 4 Business Law. A general study of such phases of law as are most beneficial to business men. Contract Law, Negotiable Instruments, Torts Agency, Real and Personal Property. Open to Seniors.

Six credit hours

Bus 5 and 6 American Railroad Transportation. A careful study of the railroad system of the United States, in its relation to the economic development of the country; the financial, business, and inter-railway organization of the various systems both past and present, together with a detailed analysis of the several branches of the service. Open to Seniors.

Six credit hours

Bus 7 and 8 Money and Banking. A thorough analysis of the development of money as a commodity and a medium of exchange; credit in its various forms, and its relation to money; single versus double standards of value; modern banking systems and forms; banks in their relation to industrial activity; the Federal Reserve system and its work. Open to Seniors.

Six credit hours

Bus 9 and 10 Accounting. An elementary study of the theory and practice of bookkeeping and accounting; single and double entry; trial balances, income sheets, balance sheets, interpretation of accounts; columnar books. Open to Juniors and Seniors.

Six credit hours

Chemistry

PROFESSOR PENNY, PROFESSOR MILLER AND ASSOCIATE PROFESSOR TIFFANY

The courses in Chemistry are designed to have a general educational value as well as to offer special technical training. The non-technical student may receive a general knowledge of

the science, especially in Inorganic Chemistry and in Qualitative Analysis. Students in Agriculture and Engineering, and pre-medical students, may find much that will be indispensable in their several professions. Students intending to follow Chemistry as an occupation may receive such instruction in the theoretical phases of the subject, and such training in practice, as will fit them to fill responsible positions as chemists.

A rapidly growing library of works on chemistry is available, which students are encouraged to consult freely. To foster the habit of technical reading a Journal Club has been formed, under the direction of a member of the faculty in the Department of Chemistry. The club holds monthly meetings at which the most important articles in current chemical literature are read and discussed.

C 11 and 12 Inorganic Chemistry. These courses, consisting of experimental lectures with text-book and occasional quizzes, two hours a week through the year, treat of the more important elements and their compounds. The treatment is adapted to the needs of those beginning the subject. Students in Agriculture and Civil, Electrical and Mechanical Engineering are required to take C 13 and 14 also. Students in Chemical Engineering are required to take C 15 and 16 also.

PROFESSOR PENNY *Four credit hours*

C 13 Qualitative Analysis. This is an elementary course in qualitative analysis designed for students who are not specializing in chemistry. The subject is taught by means of lectures, recitations and, chiefly, laboratory practice. It includes tests for the more common metals; a sufficient number of samples are analyzed by the student to give a fair understanding of the principles and methods. Three hours a week.

PROFESSOR MILLER *One credit hour*

C 14 Qualitative Analysis. This course is a continuation of C 13, which it follows, in the second term. Tests for the more important acids are studied, and further practice is given in the analysis of unknown substances. Three hours a week.

PROFESSOR MILLER *One credit hour*

C 15 Qualitative Analysis. This course is designed for students in Chemical Engineering or those specializing in Chemistry. It is given in the first term only and covers about the same ground as the two courses C 13 and 14, viz., the principles and practice of elementary qualitative analysis. Six hours a week.

PROFESSOR MILLER *Two credit hours*

C 16 Advanced Qualitative Analysis. This course is a continuation of C 15, which it follows, in the second term. It is designed to give a more thorough understanding of the subject than is possible in the more elementary courses. Tests for the rarer metals and acids are studied. The use of the spectroscope is taught. Many mineralogical and commercial samples are analyzed. Six hours a week.

PROFESSOR MILLER *Two credit hours*

C 21 and 22 Organic Chemistry. (Prerequisites: C 11 and 12.) These courses, each of three hours a week, consisting of experimental lectures with textbook and occasional quizzes, treat of the more important compounds in aliphatic and aromatic chemistry. As supplementary to these courses the laboratory courses C 35 and 36 are offered in the following year.

PROFESSOR PENNY *Six credit hours*

C 23 Gravimetric Analysis. (Prerequisites: C 11 and 12 and 13 or 15.) This is a laboratory course, supplemented by lectures and recitations. Some of the more important methods of gravimetric analysis are studied, such as the estimation of metals and acids. Six hours a week.

ASSOCIATE PROFESSOR TIFFANY *Two credit hours*

C 24 Volumetric Analysis. (Prerequisites: C 11 and 12, 13 or 15, and 23.) This course is a continuation of C 23. It treats of the more important methods of volumetric analysis, such as acidimetry, alkalimetry, oxidation and reduction methods, iodimetry, and precipitation—volumetric methods. A number of tech-

nical products and articles of commerce are analyzed, such as the important acids, alkalies, bleaching powder, ores, etc. Six hours a week.

ASSOCIATE PROFESSOR TIFFANY *Two credit hours*

C 26 Agricultural Analysis. In this course practice is given in the analysis of agricultural products, such as feeds and dairy products, and of fertilizers. Much attention is given to standard and rapid methods of volumetric analysis. One hour lecture and six hours laboratory.

PROFESSOR MILLER *Three credit hours*

C 31 and 32 Industrial Chemistry. (Prerequisites: C 11 and 12, and 21 and 22.) These courses consist of three hours a week of lectures, recitations and conferences on the more important technical operations of chemistry. A study is made of plant equipment, as well as of the chemical principles and processes, used in such industries as the manufacture of acids, alkalies, soap, chlorine bleaching powder, paper, dyes, cement, glass, paints, iron and steel, the refining of oil, etc. Numerous inspection trips are made during the year to manufacturing plants.

ASSOCIATE PROFESSOR TIFFANY *Six credit hours*

C 33 and 34 Chemical Calculations. These courses, consisting of two hours of lectures a week, deal chiefly with the principles of stoichiometry. All of the calculations arising in analysis are studied in detail by means of assigned problems to be solved by the student and subsequently to be discussed in class.

PROFESSOR MILLER *Four credit hours*

C 35 and 36 Organic Preparations. (Prerequisites: C 11 and 12, 15, 16, 21 and 22, 23 and 24.) These are laboratory courses, consisting of six hours each week, in the preparation of some of the more important aliphatic and aromatic bodies. The type of reaction and the properties of the substance are studied in each case. Written reports on the methods

employed and on the properties and uses of the substance prepared are required from each student. Such fundamental reactions as sulphonation, nitration, reduction, acetylation, etc., are carefully studied. A few of the simpler intermediate bodies used in making dyes, as well as some of the simpler dyes, are made.

ASSOCIATE PROFESSOR TIFFANY *Four credit hours*

C 37 Gas Analysis. (Prerequisites: C 11 and 12, 21 and 22, 15 and 23.) This is a laboratory course with explanatory lectures. It treats of the methods of analyzing flue gases and illuminating gas, of the use of the nitrometer, of the calculations involved and of the application to practice. Three hours a week.

PROFESSOR PENNY *One credit hour*

C 41 and 42 Physical Chemistry. These courses of three hours each a week consist of lectures with text-book. They treat in an elementary way of the gas laws, thermodynamics, solutions, osmotic pressure, conductivity, ionization, thermochemistry, chemical kinetics, equilibrium, the phase rule, radioactivity and the like.

PROFESSOR PENNY *Six credit hours*

C 43 Theoretical Electrochemistry. This course, given in the first term, consists of lectures and recitations. It treats of the theories bearing on electrochemistry. Faraday's laws, ionic migration, electromotive force, polarization, conductivity of solutions, molten electrolytes, the theory of primary and secondary cells, are the chief topics considered.

PROFESSOR MILLER *Three credit hours*

C 44 Applied Electrochemistry. This course, given in the second term, is supplementary to C 43. It consists of lectures and recitations with much practical work in the laboratory. The electrolysis of alkali chlorides, the refining of metals, the production of pigments, electroplating, electroanalysis, electric

furnaces, the fixation of atmospheric nitrogen, and similar processes are the chief topics considered. Trips of inspection are made during the year to plants in the vicinity where electrochemical processes are carried on. The course consists of two hours of lectures and recitations and three hours of laboratory weekly.

PROFESSOR MILLER *Three credit hours*

C 47 Technical Analysis. (Prerequisites: C 11 and 12, 15, 23 and 24.) This laboratory course is designed for students in Chemical Engineering and those who specialize in industrial chemistry. It treats of the methods of analysis used in the chemical industries, or specially applied to industrial products and articles of commerce. The methods actually used in control laboratories are largely followed. Among the substances analyzed are acids, alkalies, soaps, oils, fats and waxes, foods, coal, ores, alloys, etc. Twelve hours a week.

ASSOCIATE PROFESSOR TIFFANY *Four credit hours*

Education, Psychology and Sociology

PROFESSOR WILKINSON

EDUCATION

Ed 3 Principles of Education. The aims of this course are: (1) to trace briefly the development of educational ideals through a comparison of certain educational theories, (2) to discover the important biological, psychological and sociological principles involved in education, (3) to organize these principles into a theory of education suited to a democracy. While the course is intended primarily for students who expect to teach, it will be of value to other students as a means of gaining an intelligent insight into one of our greatest social instiutions.

Three credit hours

Ed 8 High School Aims and Methods. This course includes a study of the development of second-

ary education in the United States, the aims and functions of the high school in a democracy, the supervision of study, measuring the results of teaching, etc. The course is designed especially for students who expect to teach in secondary schools.

Three credit hours

PSYCHOLOGY

Psy 1 Introduction to Psychology. An elementary course in general psychology designed to acquaint the student with the main facts and principles of adult human conscious life. The topics treated include the types of action, their neural basis, and the nature and functions of mental processes.

Three credit hours

Psy 2 Applied Psychology. A study of those phases of psychology that have important practical applications. Special attention is given to the applications of psychology in the field of education, but an opportunity is given to each student to make a study of its applications in the field of his chosen career.

Three credit hours

SOCIOLOGY

Soc 1 Introduction to the Study of Society. This course is designed to acquaint the student with the nature and origin of society and social institutions, the operation of social forces and laws, and the aims and ideals of society, with special reference to a democracy. The course aims to lay a foundation for the scientific study of practical social problems.

Three credit hours

Soc 2 Practical Sociology. A course dealing primarily with social conditions, their causes, significance to society, and possible means of improvement. Among the topics treated the following receive special attention: Family life, immigration, public health,

child labor, women in industry, poverty, care of dependents and defectives, crime and punishment, the conservation of natural resources.

Three credit hours

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, AND MR. VAN KEUREN

The courses in the Department of English are designed (1) to enable every student after graduation to express his ideas, orally or in writing, in accurate, clear, effective English; and (2) to give to students through required and elective work an acquaintance with the best authors in English and American Literature and an appreciation of good poetry and prose. All Freshmen are required to take Composition, which involves training in oral and written expression; all Sophomores, a general course in Literature, which treats writers, types, and movements. Seniors in Arts and Science and in Engineering are required to take an additional course in English. Elective courses in 1922-1923 will be No. 11, 17, 39, 22, 32 and 36.

E 1 and 2 Composition. An elementary course which lays special stress on accuracy and clearness in expression. Recitations, themes, practice in public speaking, conferences, and outside readings. Required of all Freshmen.

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, AND MR. VAN KEUREN. *Six credit hours*

E 3 and 4 Literature. A study of selected English poems, first term; a study of the drama, essay, novel, and short story, second term. Lectures, recitations, and reports. Required of all Sophomores in Engineering and Agriculture.

ASSOCIATE PROFESSOR FOSTER *Four credit hours*

E 5 and 6 Literature. General Survey. A brief survey of the history of the English language and literature, followed by a more detailed and thorough study of the main literary forms—narrative and lyric poetry, the drama, the novel, and the essay. Discussions, lectures, outside readings, reports, and conferences. Required of Sophomores in Arts and Science.

PROFESSOR DUTTON *Six credit hours*

E 7 and 8 Composition. Technical English for Engineers. In this course, students have practice in public speaking, and in the writing of business letters, reports, instructions, orders, specifications and contracts, and general engineering papers. Required of Seniors in Engineering.

PROFESSOR SYPHERD *Two credit hours*

E 9 and 10 Composition and Literature. A study of the English essay, with exercises in expository writing, first term; a study of the short-story in English, with exercises in narrative writing, second term. Required of Seniors in Arts and Science.

PROFESSOR SYPHERD *Four credit hours*

E 11 Composition. An advanced course in narrative and descriptive writing. Themes, outside reading, and conferences. Elective for Sophomores and Juniors in Arts and Science.

MR. VAN KEUREN *Three credit hours*

E 13 and 14 Composition. Technical English for Agricultural students. A course in the writing of reports, newspaper articles, and theses, and in the preparation and delivery of speeches and addresses. Elective for Seniors in Agriculture.

PROFESSOR DUTTON *Two credit hours*

E 15 Literature. Romantic Movement. A study of the social, philosophical, and literary tendencies which are found in the prose and poetry written between 1798 and 1832. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 16 Literature. Victorian Poetry. This course is centered about the poems of Browning, Tennyson, Arnold, and Swinburne. The aim of the course is to obtain a knowledge of the poetry of the period, to study the poems as an expression of the philosophy of life of each of the poets, and to correlate this poetry

with the social movements of the time. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 17 Literature. Nineteenth Century Novel. A study of the main novelists of the century: Scott, Dickens, Thackeray, Eliot, Meredith, and Hardy. Collateral reading in the contemporary novel. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 20 Literature. Shakspere. The Elizabethan stage; social, political, and literary conditions; a study of selected plays. Elective for Juniors and Seniors.

PROFESSOR SYPHERD *Three credit hours*

E 22 Literature. Modern Drama. Preliminary view of the English drama since Shakspere. Recent and contemporary European drama (Continental plays in translation). Elective for Juniors and Seniors. [Omitted in 1921-1922.]

Three credit hours

E 27 Literature. A literary study of the Bible. This course is an introduction to the literary study of the English Bible. It involves a general consideration of the contents and the composition, a brief review of the history of the Translations or Versions, a discussion of the literary forms and the literary qualities, and a study of its influence in English Literature.

PROFESSOR SYPHERD *Three credit hours*

E 32 Literature. Classics in Translation. A study of Greek and Roman classics which have influenced English Literature and English thought. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 34 Literature. A general survey of the field of American Literature from Franklin to the present time, and an intensive critical study of the most important work of the chief American poets and prose writ-

ers. Lectures, recitations, outside reading, and reports. Elective for Sophomores and Juniors.

PROFESSOR DUTTON *Three credit hours*

E 36 Literature. Chaucer. A critical and appreciative study of some of the Canterbury Tales and of other poems by Chaucer. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

PROFESSOR SYPHERD *Three credit hours*

E 39 Literature. Emerson. A study of Emerson as poet, essayist, and philosopher. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

PROFESSOR DUTTON *Three credit hours*

E 41 and 42 Public Speaking. A course in the theory and practice of public speaking. Elective for Sophomores, Juniors, and Seniors. This course may be elected for either term.

Two credit hours

Geology and Mineralogy

PROFESSOR PENNY AND PROFESSOR MILLER

The courses in Mineralogy and Geology are designed to give an insight into the theoretical side of the subjects, but more especially a knowledge of their practical and economic relations. A good collection of mineral and geological specimens is available.

Geol 31 Mineralogy. This course includes a brief study of crystallography and of the more important materials, with some laboratory work in determinative mineralogy. Special attention is given to minerals of economic or industrial value, such as ores. Trips of inspection are made to places in the vicinity where matters of mineralogical interest may be studied.

PROFESSOR MILLER *Two credit hours*

Geol 32 Geology. This course consists of lectures and recitations. It treats of dynamic, struc-

tural and historical geology. Particular attention is paid to the economic phases of the subject.

PROFESSOR MILLER *Two credit hours*

History and Political Science

PROFESSOR VAUGHN AND ASSOCIATE PROFESSOR BEVAN

The courses in this Department are arranged in the approximate order in which they should be taken by the student. In the first two years certain courses are required; all other courses are elective for properly qualified students. Sophomores may, with permission of the Department, elect certain courses in addition to the required work. Courses 9, 10, 13, 14 will usually be given in alternate years.

In all courses in the Department emphasis is placed upon systematic and thoughtful work, upon class-room discussion, and upon the problems of present-day citizenship.

H 1 and 2 Modern and Contemporary Europe. An introductory course dealing with the history of Europe from the close of the Napoleonic Wars to the present time, with special emphasis on the period since 1870. Required of Freshmen in Arts and Science.

PROFESSOR VAUGHN AND ASSOCIATE PROFESSOR BEVAN *Six credit hours*

H 3 History and Government of Delaware. The aim of this course is to give a general view of the history of Delaware as colony and state and also to outline the main features of its government. Required of Freshmen in Engineering and of Sophomores in Agriculture.

PROFESSOR VAUGHN *One credit hour*

H 5 History of the United States (1736-1848). An advanced course in American history, embracing a study of the Revolutionary period, the formation of the Constitution, foreign relations, early national development, Jacksonian democracy, westward expansion, and the Mexican War. Required of Sophomores in Arts and Science.

PROFESSOR VAUGHN *Three credit hours*

H 6 History of the United States (since 1848). A continuation of H 5 dealing with the slavery controversy, the Civil War, reconstruction problems, material development, and contemporary history and problems. Required of Sophomores in Arts and Science.

PROFESSOR VAUGHN *Three credit hours*

H 9 History of England (to 1688). A general study of the development of the English people—political, social, institutional, and literary—from the earliest times to the Revolution of 1688. Readings and reports. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

PROFESSOR VAUGHN *Three credit hours*

H 10 The British Empire. This course is a continuation of H 9. It embraces a survey of English history since the Revolution of 1688 as a basis for special study of the expansion of England into Greater Britain and of the problems of the Empire. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

PROFESSOR VAUGHN *Three credit hours*

H 13 The Renaissance and Reformation. The political background of the period is studied, but special emphasis is laid on social and economic conditions, the developments in art and literature, and the causes and results of the Protestant revolt. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR BEVAN *Three credit hours*

H 14 The French Revolution and Napoleon. A special study of the Revolutionary era: the characteristics of the Old Regime, the philosophers and economists, the course of the Revolution, the rise of Napoleon, and the wars of the Empire. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR BEVAN *Three credit hours*

H 21 and 22 American Government. A general course dealing with the organization and activities of

our American government—both national and state. Considerable stress is placed upon practical problems and present-day developments. Required of Seniors in Agriculture and elective for Juniors and Seniors in Arts and Science.

PROFESSOR VAUGHN *Six credit hours*

H 27 and 28 Studies in Delaware History. An advanced course which offers opportunity to develop special topics in the social, economic, and political history of the state. The aim is partly information and partly training in research work. Elective for Juniors and Seniors.

PROFESSOR VAUGHN *Four or six credit hours*

H 29 and 30 Research Course. The student may select his topic for investigation from any of the fields of work outlined above. Elective for Seniors.

PROFESSOR VAUGHN *Six credit hours*

Mathematics

PROFESSOR HARTER, PROFESSOR PRESTON, ASSISTANT PROFESSOR T. D. SMITH, AND ASSISTANT PROFESSOR REES

One year of Mathematics, covering Advanced Algebra with a rapid review of the elements, and Trigonometry, Plane and Spherical, is required of all Freshmen except those in the School of Agriculture.

Mathematics is fundamental to the various technical courses of the College and is essential to an understanding of the laws of the physical sciences. It is becoming of increasingly wider use in the expression and interpretation of the financial and industrial relations of modern social and economic life. The following courses are intended to fit the student to apply the mathematical method to his scientific studies and to enable him to follow formulated expressions of the relationship between parts in a chain of reasoning. Mathematics is thus lifted above the plane of a purely disciplinary study, for, in addition to the training in a rigorous logic, it gives the power of appreciating and using the universal language of scientific thought.

All Freshmen in Arts and Science, and Engineering will take M 3 and M 4. Students in Arts and Science with the proper prerequisites may elect M 5 and M 6. Several additional courses

are added which are open for election to the student who has the necessary preparation.

To enter a course for which another is prerequisite, the student must have passed the prerequisite course. A condition in the first semester, however, will not operate to shut out a student from his class until two weeks after the beginning of the second semester, during which time an opportunity will be given for satisfying the condition in the prerequisite course.

A student who has not offered the entrance requirement in Solid Geometry must take M 24, for which no college credit will be given.

M 3 College Algebra, including a review of the elements, and Trigonometry. Required of Freshmen in Arts and Science, and in Engineering.

Four credit hours

M 4 Advanced Algebra and Trigonometry, Plane and Spherical. (Prerequisite: M 3.) Required of Freshmen in Arts and Science, and in Engineering.

Four credit hours

M 5 Analytic Geometry, covering conic sections, higher plane curves, and elements of geometry of space. (Prerequisite: M 4.) Required of Sophomores in Engineering.

Four credit hours

M 6 Differential and Integral Calculus. (Prerequisite: M 5.) Includes a working knowledge of Differential and Integral Calculus, forming a basis to the application to Mechanics. Required of Sophomores in Engineering.

Four credit hours

M 9 and 10 General Astronomy.

Six credit hours

M 11 Theoretical Mechanics. (Prerequisite: M 6.) This course covers the applications of calculus to the solution of practical problems in Mechanics and the fundamentals of Theoretical Mechanics. Required of Juniors in Engineering.

Four credit hours

M 12 Theoretical Mechanics. (Prerequisite: M 11.) Required of Juniors in Engineering.

Four credit hours

M 13 Method of Least Squares. The theory of errors of observations.

Two credit hours

M 14 Theory of Functions.

Two credit hours

M 24 Solid Geometry. For all Freshmen in Engineering who have not offered Solid Geometry for entrance. One hour a week, for which no college credit will be given.

Military Science and Tactics

MAJOR LATHE B. ROW, *Infantry*

Professor of Military Science and Tactics

A Senior Unit of the Reserve Officers Training Corps is established at the University of Delaware. The course of instruction is compulsory for members of the Freshman and Sophomore classes. Three hours of military instruction a week are required of members of the Junior and Senior classes. The advanced course of the R. O. T. C., requiring five hours a week of instruction, is optional for Juniors and Seniors who have successfully completed the Freshman and Sophomore Courses. Each student of the Advanced Course is entitled to receive from the government the value of the government ration each day of the period from enrollment to date of graduation. Members of the Advanced Course are required to attend one R. O. T. C. Camp of six weeks' duration, normally during the summer following the Junior school year. Each student attending the Advanced Course R. O. T. R. Camp is entitled to adequate funds for travel to and from camp, uniforms and subsistence while at camp, and one dollar a day for the actual period of attendance. Qualified graduates of the Advanced Course will be offered commissions in the Officers Reserve Corps, United States Army.

Mil 1 and 2 Freshman Course. I. Elementary Subjects of Military Training: (a) Principles of the organization and administration of a company; (b)

Military Hygiene, first aid, and sanitation; (c) Military courtesies and customs of the service; (d) Interior guard duty.

II. Physical Training: (a) Setting up exercises; (b) Mass games and mass athletics; (c) College Athletics.

III. Infantry Drill: (a) Close and extended order; (b) Ceremonies.

IV. Infantry Weapons and Equipments: (a) The Infantry pack; (b) The rifle; (c) The bayonet.

Three credit hours

Mil 3 and 4 Sophomore Course. I. Military Sketching and Map Reading: (a) Map reading; (b) Military sketching; (c) Problems in map reading.

II. Physical Training: (a) Setting-up exercises; (b) Mass games and mass athletics; (c) College Athletics.

III. Infantry Drill: (a) Fundamentals of leadership; (b) Close and extended order; (c) Combat.

IV. Infantry Weapons: (a) The rifle; (b) The automatic rifle; (c) The machine gun.

V. Minor Tactics: Covering Detachments, patrols, advance and rear guards, outposts and types of formations for security.

Three credit hours

Mil 5 and 6 Junior Course. I. Field Engineering: Instruction to include the methods of military field engineering in all types of trenches and obstacles. Organization of working parties and tasks. Selection of location for trenches. Concealment and camouflage.

II. Physical Training: (a) Setting-up exercises; (b) Mass games and mass athletics; (c) College athletics.

III. Infantry Drill: (a) School of the Battalion in close order; (b) School of the Regiment in close order; (c) Participation with Unit in drills and exercises.

IV. Infantry Weapons: (a) The pistol; (b) Hand and rifle grenades; (c) Trench Mortars and One-pounder Gun.

V. Minor Tactics: Offensive and defensive conduct of small units. Combat and Reconnaissance. Orders. Deployment. Advancing the Attack. The Assault. Position warfare. Approach marches. Organization of the ground. The Company in support, in reserve, and acting alone. Machine guns. One-pounder and light mortars. Ammunition supply.

Five credit hours

Mil 7 and 8 Senior Course. I. Military History and Policy of the United States: (a) Important campaigns and battles in the history of the United States and the tactical deductions therefrom; (b) History of the military policy of the United States, including the period of the World War; (c) Economic history of the United States and the relations existing between our economic and military conditions and those of Europe, Asia, and South America.

II. Physical Training: (a) Setting-up exercises; (b) Mass games and mass athletics; (c) College athletics.

III. Infantry Drill: (a) Drills and tactical exercises; (b) Participation in the drills of the unit.

IV. Military Law and Rules of Land Warfare: (a) The Articles of War; (b) Relation of the military to civil authority; (c) Courts martial; (d) Evidence.

V. Administration: (a) Company paper work (so much as a lieutenant should know); (b) Company

administration (management and interior economy of a company).

VI. Musketry: (a) Principles of Musketry. Range estimation. Target designation. Fire distribution. Communication, signals, and transmission of fire data. Conduct of fire, to include the functions of the platoon commander with so much of the functions of a company commander as may be necessary for an intelligent understanding.

Five credit hours

Mil 5 and 6 (Non R. O. T. C.)

Three credit hours

Mil 7 and 8 (Non R. O. T. C.)

Three credit hours

Modern Languages and Literatures

Professor E. L. Smith, Assistant Professor Saleski, Assistant Professor Brinton and Assistant Professor Kirkbride

French and German are among the required subjects of study, and Spanish and Italian are offered to those who wish to elect them. With the approval of the Faculty any year or years of this work may be elected by a student in addition to the amount required in his course.

The aim of the courses offered in Modern Languages is to provide elementary and intermediate instruction in German, French, Spanish and Italian. Students who have completed commendably the courses offered in these languages may expect to possess a good pronunciation, an accurate reading knowledge of the language, and an acquaintance with the more important authors and some familiarity with the more important literary groups and movements. The scientific and commercial aspects of the languages receive due attention but without overlooking the more important cultural values. An effort is made to acquaint the student with the several European civilizations from the linguistic and literary point of view, and to inspire in him such a love for these languages and literatures as will be a source of pleasure and intellectual growth.

ML 1 and 2 Beginning French. For Freshmen who may elect French to satisfy their required work in Modern Languages. This course is a required course for students whose entrance preparation in French has been found to be deficient (see page 23). Upon satisfactory completion of this course, students are prepared to enter ML 3 and 4.

Six credit hours

ML 3 and 4 Intermediate French. This course is designed to meet the needs of Freshmen who have satisfactorily passed the departmental entrance test in French. A rapid but thorough review of French grammar. French composition is continued throughout the course by means of themes, reports, letter-writing, etc. Aural and phonetic training. After the grammar review has been completed, one period a week is devoted to the rapid reading of French texts, newspapers, etc., which are used as a basis for vocabulary building.

Six credit hours

ML 5 and 6 Advanced French. Continuation of the work of ML 3 and 4. (Prerequisite: ML 3 and 4 or their equivalent). Formal composition. Outline of history of French literature with illustrative reading. Aural training and definite emancipation from dictionary are two primary aims of this course.

Six credit hours

ML 7 Continuation of ML 5 and 6. First semester of Junior year. Elective for students who have completed ML 5 and 6 or equivalents. Aim is a wider reading knowledge and further vocabulary building. Texts chosen to form introduction to work in literature courses. Conducted entirely in French.

Three credit hours

ML 8 Literature. Second half of Junior year. Elective for students who have completed ML 7.

French Literature from 1600 to Chateaubriand. French classic drama—Corneille, Racine and Moliere. Voltaire, Diderot and Rousseau. Readings in literary history and criticism.

Three credit hours

ML 9 and 10 Nineteenth Century Literature. From the Romantics to the reaction against Naturalism. Drama, poetry, and the novel. The latter part of the course will treat contemporary writers and tendencies.

Six credit hours

SPANISH

ML 21 and 22 Elementary Spanish. Stress is laid on accurate pronunciation, mastery of elements of grammar, and the acquisition of vocabulary. Oral and written exercises. Reading of easy modern Spanish prose. Composition and conversation. Hills and Ford, Spanish Grammar. DeVitis, Spanish Reader. Crawford, Spanish Composition. Gil Blas.

Six credit hours

ML 23 and 24 Advanced Spanish. Attention will be given to both practical and literary ends. Conversation and composition in Spanish throughout the year. Humphrey's Spanish Prose Composition. During the first half of the year representative plays and novels from the nineteenth century will be read and studied. During the second half either Cervantes' Don Quixote or the dramas of Lope de Vega and Calderon will be studied. Lectures, readings, and reports.

Six credit hours

ITALIAN

ML 41 and 42 Elementary Italian. Study of Italian grammar with oral exercises in elementary

composition. Grandgent, Italian Grammar. Easy reading in modern Italian.

Six credit hours

ML 43 and 44 Advanced Italian. Reading of more difficult Italian prose. Dante, La Divina Commedia.

Six credit hours

GERMAN

ML 61 and 62 First Reading Course. The sole aim of this course is to provide the student with an elementary reading knowledge of the language. Accordingly grammar and pronunciation are taught only in so far as they are necessary for this purpose. Bierwirth, Elements of German; Storm, Immensee; Bernhardt, Deutsche Literaturgeschichte; Heyse, L'Arrabbiata. No credit will be given for less than the full course.

Six credit hours

ML 63 and 64 Second Reading Course. The purpose of this course is to help the student attain ease and accuracy in the reading of more difficult German. Etymology and the formation of words are discussed in so far as these studies contribute to the purpose stated. No credit will be given for less than the full course.

Six credit hours

ML 65 Language Course. (This course is prerequisite to all courses between 71 and 81 inclusive.) Grammar, composition, conversation.

Three credit hours

ML 67 and 68 Reading in Special Subjects. (Prerequisite ML 64.) The purpose of this course is to assist students specializing in other fields to avail themselves of the material published in German in these particular fields. Accordingly, history, chemistry, physics, literature, or whatever other subjects

constitute the field of special study of the individual student, will be taken up. This course may be taken in either half-year or in both.

Six credit hours

ML 69 and 70 Individual Assistance in Special Fields. The purpose of this course is to assist students in their individual investigations in other subjects in as far as their material may be in German. Credit will be determined in the case of each student separately according to the amount and nature of his work.

ML 71 and 73 Goethe. (Prerequisite: ML 65.) Conducted mainly in German. (In 1921-22 ML 73 will be omitted; in 1922-23 ML 71 will be omitted; in 1923-24 both ML 71 and 73 will be omitted.)

Each, Three credit hours

ML 72 Lessing. (Prerequisite: ML 65.) (Omitted in 1921-22 and 1922-23.)

Three credit hours

ML 74 Schiller. (Prerequisite: ML 65.) Conducted mainly in German. (Omitted in 1921-22 and 1923-24.)

Three credit hours

ML 76 The German Drama since Goethe. (Prerequisite ML 65.) Conducted mainly in German. (Omitted in 1921-22 and 1923-24.)

Three credit hours

ML 80 German Lyric Poetry since Goethe. (Prerequisite ML 65.) Conducted mainly in German. (Omitted in 1922-23 and 1923-24.)

Three credit hours

ML 81 Middle High German. (Prerequisite ML 65.) Conducted mainly in German. (Omitted in 1921-22 and 1922-23.)

Three credit hours

Physics

PROFESSOR HANCOCK

Two distinct series of courses are offered in physics to undergraduates. They differ in the requirements for admission and in the thoroughness of the work.

The first series (1, 2, 3, 4) is designed for those desiring to study physics from a more philosophical than mathematical standpoint in its relation to other sciences and to natural phenomena. It is open to students in the School of Arts and Science and in the School of Agriculture who have attained Sophomore standing.

The second series (5, 6, 7, 8) is designed especially for Engineering students, and more stress is therefore placed on the Mathematical work than in the first series. These courses are required of Sophomores in Engineering, but are open to all students offering the required prerequisites.

Ps 1 General Physics. Mechanics and Heat. (Prerequisite: High School Physics or M 3 and 4.) This course consists of the first and fundamental principles of the science and a study of the Mechanics of solids, liquids and gases and of Heat. Lectures and recitations. Three hours per week. Required of students in Agriculture and elective in the Arts and Science School.

Three credit hours

Ps 2 General Physics. Electricity and Magnetism, Sound and Light. A continuation of Ps 1. Lectures and recitations. Three hours a week.

Three credit hours

Ps 3 Physical Laboratory. Introduction to instruments and Physical Laboratory methods. Experiments in Mechanics of solids, liquids and gases and in Heat. Must be accompanied or preceded by Ps 1. One three-hour period a week.

One and one-half credit hours

Ps 4 Physical Laboratory. A continuation of Ps 3. Experiments in Electricity and Magnetism, Sound and Light. Must be accompanied or preceded by Ps 2. One three-hour period a week.

One and one-half credit hours

Ps 5 Engineering Physics. (Prerequisites: M 3 and 4.) A thorough course in the fundamentals of physics from an Engineering standpoint, including the solution of problems on Mechanics and Heat. Lectures and recitations. Five hours a week.

Five credit hours

Ps 6 Engineering Physics. A continuation of Ps 5. Lectures, recitation and problems on Electricity and Magnetism, Sound and Light. Five hours a week.

Five credit hours

Ps 7 Physical Laboratory. Introduction to Laboratory methods. Experiments in Mechanics of solids, liquids and gases, thermometry, calorimetry, and thermodynamics. Must be accompanied or preceded by Ps 5. One three-hour period a week.

One and one-half credit hours

Ps 8 Physical Laboratory. A continuation of Ps 7. Experiments in Electricity and Magnetism, Sound and Light. Given in connection with Ps 6. One three-hour period a week.

One and one-half credit hours

Ps 10 Advanced Physics. A second course in Physics offered to properly qualified students in any department. Lectures, recitations, problems and laboratory work.

Three and one-half credit hours

DIVISION OF ACADEMIC EXTENSION

The Division of Academic Extension was created two years ago for the benefit of people who live outside of Newark and who are unable to attend the regular courses given at the University. The work offered consists of afternoon and evening classes and lectures in subjects of college grade, conducted anywhere in the state where there is sufficient demand. Full college credit is given, on the basis of one credit for every fifteen hours of actual time expended in classes or lectures. These credits are accepted as applicable toward a bachelor's degree.

During 1920 - 1921, seven courses were maintained, as follows:

Accounting, Professor R. B. Harris—Auspices Wilmington Y. M. C. A.

Business English, Dr. F. M. K. Foster—Auspices Wilmington Y. M. C. A.

Business Law, James I. Boyce, Esquire—Auspices Wilmington Y. M. C. A.

Politics and Government, Dr. E. V. Vaughn—Auspices Wilmington Business and Professional Women's Club.

High School Aims and Methods, Professor W. A. Wilkinson —Auspices Wilmington High School.

Teaching of English, Miss Rohr—Auspices Wilmington Public Schools.

Teaching of English, Miss Rohr—Auspices New Castle County Public Schools.

It is the aim of the Division of Academic Extension to meet the needs of any town in the State. At present, no fund is available which can be applied to this work; consequently each course must be financially self-supporting. Courses may be arranged on a schedule of weekly, semi-weekly, or bi-weekly meetings, as desired, and each meeting may be of one or two hours' duration.

The School of Agriculture

FACULTY

WALTER HULLIHEN, Ph. D. *President*

CHARLES ANDREW MCCUE, S. B.
Dean and Professor of Horticulture

CLINTON OSBORNE HOUGHTON, A. B. *Professor of Biology*

WILBUR OWEN SYPHERD, Ph. D. *Professor of English*

CHARLES LYNDALL PENNY, A. M., Sc. D., *Professor of Chemistry*

ERNEST VANCOURT VAUGHN, Ph. D.
Professor of History and Political Science

THOMAS FRANKLIN MANNS, Ph. D.
Professor of Plant Pathology and Soil Bacteriology

THOMAS CONGER PALMER, S. M., D. V. M.
Professor of Bacteriology and Hygiene

GEORGE ELLIOTT DUTTON, A. M. *Professor of English*

WILLIAM ALBERT WILKINSON, A. M.
Professor of Psychology and Education

RAYMOND WALTER HEIM, S. M.
Professor of Vocational Agricultural Education

CARLETON FRIEND MILLER, Ph. D. *Professor of Chemistry*

GUY ERWIN HANCOCK, S. M., E. E. *Professor of Physics*

THOMAS ALEXANDER BAKER, S. B.
Professor of Animal Husbandry

GEORGE LEE SCHUSTER, S. M. *Professor of Agronomy*

LATHE BURTON ROW, Major of Infantry, U. S. A.
Professor of Military Science and Tactics

RALPH B. HARRIS, S. B. *Professor of Business Administration*

HAROLD E. TIFFANY, S. M. *Associate Professor of Chemistry*

LOUIS REINHOLD DETJEN, S. B., A. M.
Associate Professor of Horticulture

JOHN MARVIN LECATO, A. M. *Associate Professor of Biology*

FINLEY MELVILLE KENDALL FOSTER, Ph. D.
Associate Professor of English

CHARLES RAYMOND RUNK, S. B.
Assistant Professor of Agronomy

ERNEST CANFIELD VAN KEUREN, A. B. *Instructor in English*

BOUSSON DAVISON, S. B. *Instructor in Horticulture*

ALLAN CARRUTH WILLIAMS, S. B.
Instructor in Animal Husbandry

The Four-Year Course in Agriculture

The Four-Year Course in Agriculture combines a technical course in Agriculture with as much cultural training as possible. Agriculture is viewed as applied science and the course is planned to give the student a broad foundation in the fundamental sciences which underlie modern agricultural practice.

The aim of the course is to train and develop men to become farm managers, vocational teachers, or specialists in some of the various phases of agriculture.

REQUIREMENTS FOR GRADUATION

Candidates for graduation are required to complete 138 credit term-hours of work in addition to Military Science. All Agricultural students will be required to spend at least six months, or their equivalent, before the Senior year, in practice work on a farm. All candidates for a degree in Agriculture must pass an examination in farm practice before December 1 of the Senior year.

Candidates for a degree in Agriculture must at the beginning of the Junior year register with the Dean of Agriculture as students majoring in Agronomy, Animal Husbandry, Horticulture, or Vocational Agricultural Education. A minimum of 25 credit term-hours must be taken in the department in which the student is majoring, except in Vocational Education, where 15 credits are required. The student should consult with the head of the department in

which he is taking his major work, regarding his selection of elective subjects during his Junior and Senior years.

Except by special permission from the Dean of Agriculture, Sophomores, Juniors, and Seniors will not be allowed to take in any one term more than 20 credit hours, and Freshmen more than 18 credit hours, exclusive of Military Science.

In addition to fulfilling these specific requirements, candidates for graduation must also attain the grade of B or better in at least 50 per cent of the prescribed number of credit term-hours of work.

PRESCRIBED STUDIES

	Credits
English, 1, 2, 3, and 4	10
Biology, 1, 2, 7, and 8	12
Chemistry, 11, 12, 15, 21, 22, 23, and 26	21
History, 3 and 21	4
Business, 1	3
Bacteriology, 1, and 2	6
Physics, 1, and 3	4.5
Plant Pathology, 2; or Hygiene, 2	3
Farm Management, Agr., 6	3
Genetics, Hort., 33	3
Agronomy, 1, 2, and 4	9
Animal Husbandry, 17, 18, and 19	9
Horticulture, 16, 17, and 18	9
Seminars	2
Vocational Education, 2	3

ELECTIVE STUDIES

Agricultural Subjects	14
Free Electives	22.5
Total	138

FRESHMAN YEAR

First Term	H.	C.
English, 1	3	3
Biology, 7	5	3
Chemistry, 11	2	2
Chemistry, 15	6	2
Agronomy, 1	4	3
Animal Husb'dry, 17	4	3
	24	16
Military Science, 1	3	1.5
	27	17.5

Second Term	H.	C.
English, 2	3	3
Biology, 8	5	3
Chemistry, 12	2	2
Horticulture, 16	4	3
Animal Husb'dry, 18	4	3
Agronomy, 2	4	3
	20	17
Military Science, 2	3	1.5
	22	17

SOPHOMORE YEAR

First Term	H.	C.
English, 3	2	2
History, 3	1	1
Chemistry, 21	3	3
Chemistry, 23	6	3
Physics, 1, 3	6	4.5
Horticulture, 17	4	3
Animal Husb'dry, 19	4	3
	26	19.5
Military Science, 3	3	1.5
	29	21

Second Term	H.	C.
English, 4	2	2
Chemistry, 22	3	3
Chemistry, 26	7	3
Agronomy, 4	6	4
Horticulture, 18	4	3
Elective Agriculture	3	3
	25	18
Military Science, 4	3	1.5
	28	19.5

JUNIOR YEAR

First Term	H.	C.
Business, 1	3	3
Bacteriology, 1	5	3
Horticulture, 33	3	3
Biology, 1	5	3
Elective	6	6
	22	18
Military Science, 5	3	1.5
	25	19.5

Second Term	H.	C.
Voc'n'l Education, 2	3	3
Bacteriology, 2	5	3
Plant Pathology, 2; or Hygiene, 2	5	3
Biology, 2	5	3
Electives	6	6
	24	18
Military Science, 6	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
History, 21	3	3
Seminar	2	1
Electives	14	14
	19	18
Military Science, 7	3	1.5
	22	19.5

Second Term	H.	C.
Agronomy, 6	5	3
Seminar	2	1
Electives	14	14
	21	18
Military Science, 8	3	1.5
	10	19.5

SHORT COURSE IN AGRICULTURE

A short course in Agriculture extending over a period of approximately one week will be given during the winter of 1921-22.

Agricultural Extension

DIVISION OF AGRICULTURAL EXTENSION

C. A. McCue, S. B. *Director and Specialist in Horticulture*
M. O. Pence, S. B. *State Leader of County Agents*
Theodore E. Martin, A. B., S. B. *State Leader Boys' and Girls' Clubs*
Kathryn E. Woods *Home Demonstration Agent at Large*
James F. Adams, Ph. D. *Specialist in Plant Diseases*
Florence Colbert *Secretary*
R. O. Bausman, S. B. *County Agricultural Agent New Castle County*
A. D. Cobb, S. B. *County Agricultural Agent Kent County*
M. C. Vaughn, S. B. *County Agricultural Agent Sussex County*
Agnes P. Medill *County Club Agent New Castle County*
Helen L. Comstock, S. B. *County Club Agent Kent County*
Dorothy Emerson *County Club Agent Sussex County*

The Division of Agricultural Extension was established by an act of the Legislature in 1911. The work is largely supported by a Federal appropriation, known as the Smith-Lever fund, and is supplemented by State Appropriations.

The function of this Division is to carry Agricultural information out into the rural districts of the State and to demonstrate how such information may be put into advantageous practice. The aims of the Division are better farming; better farm houses; better farm life; better business methods on the farm; more economic distribution of farm products; and the inculcation in the boys and girls of the farm homes of a deep-rooted love and enthusiasm for farm life.

The Division is organized upon extension work for men, women and boys and girls. Each county has a county agricultural agent, and a county club agent, while the women's work is looked after by a Home Demonstration Agent at large for the entire State. These various agencies cooperate with the people of the open county by conducting demonstrations in better farming and better home making, and are assisted in every way possible by the several departments at the College and in some cases by specialists along certain lines of Agriculture.

As a cooperating agency the farmers themselves have organized County Farm Bureaus, which look largely to the county agents for inspiration and guidance.

All Agricultural Extension work is carried on upon the project basis, and is based upon fundamental economic needs of the various farm industries or farm communities.

THE EXPERIMENT STATION

Experiment Station Staff

C. A. McCue, S. B.	*Director and Horticulturist*
Thomas F. Manns, Ph. D.	*Plant Pathologist and Soil Bacteriologist*
E. M. R. Lamkey, Ph. D.	*Plant Physiologist*
T. A. Baker, S. B.	*Animal Husbandman*
C. C. Palmer, S. M., D. V. M.	*Consulting Veterinarian*
George L. Schuster, S. M.	*Agronomist*

Lester W. Tarr, S. B.	*Chemist*
Louis R. Detjen, S. B., A. M.	*Associate Horticulturist*
James F. Adams, Ph. D.	*Associate Plant Pathologist*
G. V. C. Houghland	*Assistant Agronomist*
Spencer C. Noble, S. B.	*Assistant Chemist*
Florence Colbert	*Secretary*
Rebecca Morgan	*Librarian*

The Delaware College Agricultural Experiment Station was made possible by an act of Congress passed in 1887, known as the Hatch Act. Under the provisions of this act each state received an annual appropriation of $15,000 for the establishment of an Agricultural Experiment Station. This amount was supplemented in 1906 by an act known as the Adams Act, which carries an annual appropriation of $15,000 for the use of the Agricultural Experiment Station.

The function of the Experiment Station is to carry on research work along the lines of plant and animal production and products. The object of such research work is to add to the sum of human knowledge relative to plant and animal uses, and to better agricultural practices.

The Experiment Station has a separate research library, research laboratories and staff. It is carrying on investigations in field crops, soils, plant diseases, animal diseases, animal production, fruit culture, vegetable culture, soil bacteriology, plant breeding, agricultural chemistry and the physiological reactions of plants.

The laboratories and offices of the Experiment Station are located in Wolf Hall. A considerable portion of the college farm is given over entirely to experimental work in Agriculture.

The results of the investigational work of the Station are published from time to time in bulletins which are distributed free to all farmers in the State who may wish them. The work of the Station has had a profound influence upon Delaware Agriculture.

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Agronomy

PROFESSOR SCHUSTER AND ASSISTANT PROFESSOR RUNK

Agronomy is the science of the soil and what it produces. The soil is studied with reference to its influence upon plant growth. The fundamental principles of soil management for crop production is especially emphasized. The study of soils presupposes a fair understanding of the principles of physics, chemistry and biology. The courses in soils are designed to equip the future farmer with a complete knowledge of his soil, and also to give adequate training to students who desire to specialize in soils.

Field crops, the products of the soil, are studied from the standpoint of adaptation and improvement. The study of Field Crops presupposes a general knowledge of Botany. Special attempt is made to adapt the work to the young man who wishes to apply scientific principles of field crop culture and improvement on the farm.

This Department also offers courses in Agricultural Engineering and Farm Management. Agricultural Engineering deals with buildings, machinery, power, drainage, fencing, rural heating, lighting, plumbing and sewage disposal.

The aim of the farm management courses is to assist the student to perceive the just relationship of the several factors of production and disposition as applicable to local conditions, and to develop in him executive and administrative capacity.

Students who major in the Department of Agronomy should be well fitted for general farming, investigational work in the Experimental Stations, and County Agricultural Agent work.

EQUIPMENT

The Department of Agronomy has large well-lighted laboratories in Wolf Hall for use in the study of crops and soils as well as ample greenhouse space. Thirty acres of the Experimental farm are devoted to

experimental and research work in Agronomy and the results are used to supplement class and laboratory work. Students in Farm Management are required to visit Farms of each of the leading types of the State, viz: Dairying, Horticulture and General farming.

COURSES

Agr 1 Field Crops—Cereals. A general course dealing with the culture and marketing of grain crops. Special attention is given to the judging of corn, wheat and oats and a study of the market classes and grades is also made. Varieties and types of grain groups are considered in connection with the principles of improvement by selection and breeding. Seed testing and methods of storage are also studied. Required of all Freshmen in Agriculture. Two lectures and two laboratory hours.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 2 Field Crops continued—Forage crops. (Prerequisites: Agr 1; B 7). A further study of the field crops taking up the various types and varieties of grasses and leguminous crops used for hay and pasture. Special attention is given to cultural methods, propagation and value of various plants for feed and soil improvement. Required of all Freshmen in Agriculture. Two lectures and two laboratory hours.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 4 Elementary Soils (Prerequisites Chem 11, 12, 15, 21 & 23; Ps 1, & 3). A study of the origin, formation, classification, function of soils, and relation to plant life. The question of soil management in relation to tillage, drainage and fertility is taken up. Required of Sophomores in Agriculture. Two lectures and four laboratory hours.

ASSISTANT PROFESSOR RUNK *Four credit hours*

Agr 5 Soil Fertility (Prerequisites C 22, 26; Agr 4). This is a further study of the principles developed in Agronomy 4. The ultimate effect of various rotations and different systems of farming on the fertility of the soil is studied and attention is also given to the conditions of Delaware. Likewise study is made of the use of manures, fertilizers and amendments with a comparison of their Agricultural and Commercial value for different crops. Elective for Juniors and Seniors in Agriculture. Two lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 6 Farm Management. This course is designed to summarize the student's agricultural training and experience and apply it to the efficient management of the farm as a whole. The organization of the farm as a business enterprise, its arrangement with reference to size and shape of field; systems of crop and livestock management; the relation of fixed to circulating capital; the relation of labor to income; farm accounts, etc. Required of all Seniors in Agriculture. Two lectures and three laboratory hours.

PROFESSOR SCHUSTER *Three credit hours*

Agr 7 Advanced Soils (Prerequisites C 26; Agr 5). A study of soil classification covering character, extent, etc., of provinces, series and types in the United States. A field study of the methods of mapping soils and practice in soil mapping is given. The effect upon crops of different fertilizers added to the soils that are mapped is determined by pot experiments. Assigned readings are made. Elective for Seniors in Agriculture. One lecture and one four-hour laboratory period.

PROFESSOR SCHUSTER *Two credit hours*

Agr 8 Plant Breeding. (Prerequisites Agr 1, 2, 4, Hort 33). The improvement and breeding of field crops including the grains, grasses and legumes; selection; results obtained by various investigators.

Lectures, assigned reading, demonstrations, and laboratory work. Elective for Juniors and Seniors in Agriculture. One lecture and two laboratory hours.
PROFESSOR SCHUSTER *Two credit hours*

Agr 9 Farm Equipment. This course takes up a study of the design, construction and cost of farm buildings; the adaptability, efficiency, construction, operation and durability of farm machinery, motors, gasoline engines and tractors; sewage disposal, water supply and lighting systems. Elective for Juniors and Seniors in Agriculture. Two lectures and one three-hour laboratory period.
ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 10 Methods of Field Experimentation (Prerequisites Agr 1, 2, 4, 5, 7 & 8). A course designed for students intending to take up Experiment Station work. Methods of plotting land for soil and crop experiments; check systems; interpretation of results. The literature of this and other countries pertaining to experimental work will be carefully studied. Elective for Seniors in Agriculture. One lecture and two laboratory hours.
PROFESSOR SCHUSTER *Two credit hours*

Agr 11 & 12 Thesis and Seminar. Original work on an approved subject of investigation. Required of all Seniors who Major in Agronomy. Credit hours adjusted to time given to work.
THE DEPARTMENTAL STAFF

Animal Husbandry

PROFESSOR BAKER AND MR. WILLIAMS

The courses in the Department of Animal Husbandry are designed to familiarize the student with the fundamental principles underlying animal production and to associate these principles with modern practice. In all of the general courses special emphasis is laid on the economic aspects of this important industry and an effort is made to show the student the place of Animal Husbandry in the general farm scheme of the South Atlantic

States. The class room and the laboratory instruction is supplemented by work with the live stock on the College Farm and by visits to the many flocks, herds, and studs of Delaware and Pennsylvania. The college maintains a herd of about fifty head of dairy cattle, which is available for practice in judging and herd management. Fine specimens of various breeds of horses, sheep and swine are also owned by the college. An effort is being made to secure vacation employment for all students specializing in this department, as practical work under actual farm conditions is considered to be an essential part of the training.

A H 17 Types and Market Classes of Farm Animals. A study of the development of the types of horses and hogs, and of the characteristics of the breeds within the types. The market classes are discussed in detail and lantern slide lectures will be given to illustrate both types and market classes. Laboratory practice in judging will be conducted regularly at the College Farm. The selection of desirable breeding stock is given especial attention. Two lectures and two laboratory hours per week. Freshman year.

Three credit hours

A H 18 Types and Market Classes of Farm Animals. (Prerequisite: A H 17). A continuation of A H 17 embodying the study of types, breeds, and market classes of cattle and sheep. This course includes a two-day trip thru northern Delaware and southeastern Pennyslvania for the purpose of visiting several well-known breeding establishments. Two lectures and two laboratory hours per week. Freshman year.

Three credit hours

A H 19 Feeding Farm Animals. (Prerequisite: C 11, 12, 15, 21, 23.) The objects of this course are threefold: (1) To teach the fundamental principles underlying the practice in feeding farm animals. (2) To teach as much as possible concerning the source, composition and usefulness of the feeds commonly used in this country. (3) To teach the practice of feeding itself, so far as practice can be taught in

lecture and laboratory with occasional visits to the barns.

A great many problems are given the student to solve and reports on assigned readings are required weekly. A very fundamental course for successful farm operations.

Two lectures and two laboratory hours per week. Sophomore year.

Three credit hours

COURSES REQUIRED OF STUDENTS SPECIALIZING IN ANIMAL HUSBANDRY

A H 22 Advanced Judging. (Prerequisites: A H 17 and 18.) This course is a continuation of the judging work given in connection with A H 17 and 18. It is the aim of the course to give the student an intensive drill in judging so that he may be qualified for professional work at fairs. Men representing the college in judging contests will be chosen from this class. The very best class of material will be selected for the student to work with and many excellent stock farms within a radius of fifty miles will be visited. Lectures and criticism will be given in connection with the practicums. Four laboratory hours per week. Junior year.

Two credit hours

A H 24 Animal Breeding. Prerequisites: A H 17, 18; Ps 1, 3; Hort 33; B 1, 2). This course presupposes a knowledge of the foundation principles and the various theories of heredity as presented in the course in Genetics (Hort 33). It will be the aim of this series of lectures to correlate these principles and theories with the established practices of breeding farm animals. The various systems of breeding, including grading, cross breeding, line breeding, and inbreeding, will be considered in detail.

A considerable portion of the course will be de-

voted to the physiology of reproduction and the causes of sterility.

Three lectures per week. Junior year.

Three credit hours

A H 25 Animal Nutrition (Prerequisites: A H 17, 18, 19; C 11, 12, 15, 21, 23.) The aim of this course is to give the student a thoro study of the chemistry of the feeding problem. All of the recent literature dealing with the specific effects of amino acids upon the maintenance and growth of animals will be reviewed. The vitamine theory and the requirements of animals for mineral compounds will be discussed. It is hoped that by taking this course the student may be enabled to read intelligently the current scientific periodicals which pertain to this important science. One lecture per week. Senior year.

One credit hour

A H 27 Seminar. A weekly conference with Senior students in Animal Husbandry. Reviews of current literature and recent experimental work will be made by each student and this material will be discussed at the lecture hour. Each student is required to prepare a term paper covering in detail some phase of research work. Senior year.

One credit hour

A H 28 Pedigree Study. (Prerequisites: A H 17, 18 and 24). A series of lectures will be given covering the general history of breeding types of pedigrees, and all of the fundamental questions relating to the determination of animal values, based upon their ancestry. Practice in the compilation of extended pedigrees will be given in connection with the laboratory work. The Agricultural library includes a large collection of herd, stud, and flock books which are available for student use. Two lectures and two laboratory hours per week. Senior year.

Three credit hours

A H 30 Seminar. A continuation of A H 27.
One credit hour

ELECTIVE SUBJECTS

A H 21 Dairy Technology. Due to the fact that there are very small amounts of milk products manufactured in Delaware there is no demand for specialized courses in this subject. This course covers in a general manner the analysis of all dairy products, special tests for adulteration, methods of preparing starter; and the manufacture of soft cheese. Practice will also be given in the adjustment and operation of cream separators. An inspection trip will be made to some of the creameries and milk distributing plants in the vicinity of Wilmington. Two lectures and two laboratory hours per week. Open to all students.
Three credit hours

A H 23 Dairy Cattle Management. (Prerequisites: A H 17, 18, 19). This is a very practical course including the fundamental principles of dairy farm husbandry. The lectures include questions of feeding, breeding, management, sales, advanced registry testing, methods of successful practice, cost of milk production, etc. Barn plans, methods of record keeping, registration, and the scoring of barns and milk houses are considered in the laboratory periods. Practical work is also given the student in stable management and in the operation of milking machines. Two lectures and two laboratory hours per week. Junior year.
Three credit hours

A H 32 Thesis. Senior year.

A H 34 Horse, Swine, Sheep and Beef Cattle Problems. (Prerequisites: A H 19 and 24). This course is made up of a series of lectures accompanied by text book assignments. Present-day problems in horse, swine, sheep, and beef cattle farming will be

presented in such a way as to be of direct benefit to the student who expects to undertake the management of a live stock farm. The course will be modified somewhat to meet the needs of the students enrolled. A systematic course of reading is required of each student in connection with this course and an abstract of the material covered must be submitted at the close of the term. One credit hour is given for this outside work. Three lectures per week. Senior year.

Two credit hours

Bacteriology, Physiology and Hygiene

PROFESSOR PALMER AND ASSOCIATE PROFESSOR LECATO

Ba 1 and 2 General Bacteriology. Required of Juniors.

PROFESSOR LECATO *Six credit hours*

Ba 3 Advanced Bacteriology. Prerequisite: Ba 1 and 2). Elective for Seniors.

PROFESSOR PALMER *Three credit hours*

Phy 1 General Physiology. Required of Juniors specializing in Animal Husbandry.

PROFESSOR PALMER *Three credit hours*

Phy 2 Advanced Physiology. (Prerequisite: Phy 1). Elective for Juniors and Seniors.

PROFESSOR PALMER *Three credit hours*

Hyg 2 Animal Hygiene and Pathology. Required of Juniors specializing in Animal Husbandry.

PROFESSOR PALMER *Three credit hours*

For a detailed statement of courses in this department, see pages 45-48.

Biology

PROFESSOR HOUGHTON AND ASSOCIATE PROFESSOR LECATO

B 1 and 2 Elementary Zoology. Required of Juniors.

PROFESSOR HOUGHTON *Six credit hours*

B 3 and 4 Systematic and Economic Zoology. Elective for Seniors.
PROFESSOR HOUGHTON *Four credit hours*

B 5 and 6 Economic Entomology. Required of students specializing in Horticulture.
PROFESSOR HOUGHTON *Four credit hours*

B 7 and 8 General Botany. Required of Freshmen.
ASSOCIATE PROFESSOR LECATO *Six credit hours*

For a detailed statement of courses in this department, see pages 48-50.

Chemistry

PROFESSOR PENNY, PROFESSOR MILLER, AND ASSOCIATE PROFESSOR TIFFANY

C 11 and 12 Inorganic Chemistry. Required of Freshmen.
PROFESSOR PENNY *Four credit hours*

C 15 Qualitative Analysis. Required of Freshmen.
PROFESSOR MILLER *Three credit hours*

C 21 and 22 Organic Chemistry. Required of Sophomores.
PROFESSOR PENNY *Six credit hours*

C 23 Quantitative Analysis. Required of Sophomores.
PROFESSOR TIFFANY *Three credit hours*

C 26 Agricultural Analysis. Required of Sophomores.
PROFFESOR MILLER *Three credit hours*

For a detailed statement of courses in this department, see pages 51-56.

Economics and Business Administration

PROFESSOR HARRIS

Bus 1 Elementary Economics. Required of Juniors.
PROFESSOR HARRIS *Three credit hours*

For a detailed statement of courses in this department, see pages 50, 51.

Education, Psychology, and Sociology

PROFESSOR WILKINSON

Ed 3 Principles of Education. Required of students specializing in Vocational Education.
PROFESSOR WILKINSON *Three credit hours*

Psy 1 Introduction to Psychology. Required of students specializing in Vocational Education.
PROFESSOR WILKINSON *Three credit hours*

For a detailed statement of courses in this department, see pages 56-58.

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER AND MR. VAN KEUREN

E 1 and 2 Composition. Required of Freshmen.
PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER AND MR. VAN KEUREN
Six credit hours

E 3 and 4 Literature. Required of Sophomores.
ASSOCIATE PROFESSOR FOSTER *Four credit hours*

E 13 and 14 Composition. Elective for Seniors.
PROFESSOR DUTTON *Two credit hours*

For a detailed statement of courses in this department, see pages 58-61.

History and Political Science

PROFESSOR VAUGHN

H 3 History and Government of Delaware. Required of Sophomores.
PROFESSOR VAUGHN *One credit hour*

H 24 American Government. Required of Juniors.
PROFESSOR VAUGHN *Three credit hours*

For a detailed statement of courses in this department, see pages 62-64.

Horticulture

PROFESSOR MCCUE, PROFESSOR DETJEN, AND MR. DAVISON

Courses 16, 17, 18, and 33 are required of all students in Agriculture.

A student specializing in Horticulture will be expected to take nearly all the courses offered by the Department. Students who major in Horticulture are expected to elect courses 5 and 6 in Biology and course 2 in Plant Pathology.

The college is very fortunately located for the study of Horticulture. The fruit and vegetable growing centers of the State are easily accessible. Many famous fruit and truck growing districts in neighboring states are distant but a few hours' ride. The cold storage houses and the large markets of Philadelphia can be reached in an hour's time, and a famous greenhouse district of Pennsylvania lies only a few miles north of Newark. The earnest student will have many opportunities to see the practical growing, harvesting and marketing of Horticultural crops.

The Experiment Station possesses about forty acres of orchards and gardens that can, to a limited extent, be used for purposes of instruction. All the tree, vine and bush fruits that can be grown in the State are found in the College Orchards. A small amount of land is also available for the use of students in vegetable gardening. A small greenhouse is available for instructional purposes.

Hort 16 Plant Propagation. (Prerequisites: B 7 and 8). This course embraces a discussion of the principles and practices of the multiplication of plants. It includes a study of spores, seeds, stratification and seedage; buds, bulbs, roots, rhizomes, tubers; cuttings of leaves, stems and roots; herbaceous, soft wood and hardwood cuttings; layerage; grafting waxes and the principal methods of grafting; the establishment and handling of nurseries; a dis-

cussion of the various stocks that are used in the propagation of fruit trees and their adaptation. Required of all Freshmen in Agriculture. Two recitations and two laboratory hours.

MR. DAVISON *Three credit hours*

Hort 17 Pomology. (Prerequisite: Hort 16). A general course in fruit growing especially designed to meet the needs of the average student who does not care to enter into detailed problems of fruit growing or more technical phases of commercial orcharding. It embraces all of the principles and practices that are essential and necessary in the growing of an orchard, its care and its management. It includes such a variety of subjects as choosing a location and site for a fruit farm, the choosing of varieties, the planting of an orchard, pruning, spraying for diseases and insects, cultivation, fertilization, cover crops, rejuvenation of old orchards, harvesting, storing and marketing of fruit. Required of all Sophomores in Agriculture. Two recitations and two laboratory hours.

MR. DAVISON *Three credit hours*

Hort 18 Vegetable Gardening. (Prerequisite: Hort 16). A study of all garden vegetables with especial emphasis laid on the principal trucking crops. The course includes a study of the location of the farm, the best garden and truck soils, fertilizer requirements of various vegetable crops, the various vegetables from the standpoint of relationship, type, habit of growth, requirements, seeding, culture, harvesting, storing and marketing. A study in the construction and management of flats, hotbeds and cold frames, the sowing of seeds, watering, transplanting, spraying and protecting the plants from the numerous fungus and insect pests. The growing of vegetable seeds for home use and market also receives attention. Each student is required to plan, seed and operate a small garden on the college grounds in order to

become better acquainted with the principles and problems of vegetable gardening. Required of all Sophomores in Agriculture. Two recitations and two laboratory hours.

MR. DAVISON *Three credit hours*

Hort 19 Forestry. (Prerequisites: B 7 and 8). An elementary course in Forestry especially designed to meet the requirements of Agricultural students who may be interested in the conservation of forests and wood lands. The course embraces a study of forest trees of the United States, their character, value and method of dissemination; the establishment and maintenance of a forest; a study of the most approved methods of handling our forests and wood lands from the standpoint of protection, yield and reproduction; forest mensuration; forest fires, their nature, prevention and control. Elective for Juniors and Seniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 20 Pomology. (Prerequisites: Hort 16 and 17). A course designed to meet the demands for commercial orcharding. Especial emphasis is laid on the pruning of trees, fertilization problem, and the spraying of orchard crops. This course includes a study of the various systems and methods of pruning trees, shrubs and vines, wound dressings and protection, orchard rejuvenation, history of sprays and spraying, a study of the various insecticides, fungicides, spray pumps and the various kinds of nozzles, time and manner of spraying the horticultural crops for the various insects and fungus diseases. Elective for Juniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR MCCUE *Three credit hours*

Hort 21 or 22 Landscape Gardening. (Prerequisites: B 7, 8; Hort 16). This course is designed

to encourage a wider use of our native and ornamental trees, shrubs, vines and flowers in the home grounds both rural and urban and in the designing of public parks, schoolgrounds and highways. It distinguishes between the several kinds of landscape art, between the formal and the informal style of gardening. It embraces a discussion of the laws that govern the planting of trees, shrubs, vines, herbaceous perennial and annual plants., the construction of walks, driveways, lawns and their maintenance. First or second term. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 23 Advanced Pomology. (Prerequisites: B 7, 8; Hort 16, 17 and 20). This course consists of a more detailed discussion of all phases of commercial orcharding. Especial emphasis is laid on orchard management, harvesting, storing and marketing. Elective for Seniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 24 Breeding of Horticultural Plants. (Prerequisites: Hort 16, 17, 18 and 33). A study of the application of the laws of heredity to economic horticulture. The course includes a study of the more recent methods and developments in plant breeding. Elective for Juniors in Agriculture. Three recitations.

PROFESSOR MCCUE *Three credit hours*

Hort 25 or 26 Small Fruits. (Prerequisites: Hort 16 and 17.) A discussion of the commercial production of strawberries, raspberries, gooseberries, currants and grapes. The course also includes a discussion of the origin and history of the more important varieties. Elective for Juniors and Seniors in Agriculture. First or second term.

PROFESSOR DETJEN *Three credit hours*

Hort 29 Systematic Pomology. (Prerequisites: Hort 17 and 20.) A study of the systematic relation-

ship of the cultivated fruits of the United States. Identification, description and judging of the common commercial varieties of apples, pears, plums, grapes and peaches grown in America. Elective for Seniors in Agriculture. One recitation and four laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 31 and 32 Horticultural Seminar. A discussion of principles and practices of horticulture and a study of horticultural literature, both past and present, and current events of horticultural interest. Required of all Senior students majoring in Horticulture.

PROFESSOR DETJEN *Three credit hours*

Hort 33 Genetics. (Prerequisites: B 7 and 8.) A brief course discussing the fundamental principles and the various theories of heredity. Required of Juniors in Agriculture and elective for Juniors and Seniors in Arts and Science. Three recitations.

PROFESSOR MCCUE *Three credit hours*

Military Science and Tactics

MAJOR ROWE

Mil 1 and 2 Required of Freshmen.
Three credit hours

Mil 3 and 4 Required of Sophomores.
Three credit hours

Mil 5 and 6 Required of Juniors.
Three credit hours

Mil 7 and 8 Required of Seniors.
Three credit hours

For a detailed statement of courses in this department, see pages 66-69.

Physics

PROFESSOR HANCOCK

Ps 1 Mechanics, Heat and Sound. Required of Sophomores.

PROFESSOR HANCOCK *Three credit hours*

Ps 3 Physical Laboratory. Required of Sophomores.

PROFESSOR HANCOCK *One and one-half credit hours*

For a detailed statement of courses in this department, see pages 74, 75.

Plant Pathology

PROFESSOR MANNS

Pl Path 2 Plant Pathology. (Prerequisites: B 7 and 8; Ba 1 and 2.) An elementary course covering the principal bacterial and fungous diseases of the more important economic plants, with special emphasis on orchard and trucking diseases. Students will be expected to learn to recognize the more important diseases and to prescribe treatment. Considerable attention will be given to method of disease distribution, overwintering, and the possible methods of control. Some time will be devoted to isolating and culturing parasitic bacteria and fungi. A study will be made of the commercial sprays, fungicides and disinfectants used in control of plant disease. Special emphasis will be placed on spraying programs for the control of the diseases of apple, pear, peach, grape and truck crops, including canteloupes, potatoes, tomatoes and cabbage; disinfectants for the diseases carried by cereals, white potatoes and sweet potatoes will be reviewed. Several trips will be made into different districts to study diseases under field condi-

tions. Each student will be required to make and properly label a collection of 25 disease specimens.

Elective for students in Arts and Science and required of Horticultural Juniors in Agriculture. One hour lecture and four hours laboratory. Second term.

Three credit hours

Soil Bacteriology

PROFESSOR MANNS

S B 2 Soil Bacteriology. (Prerequisites: Bacteriology 1, 2; Chemistry 26.) The course covers a study of the economic importance of the invisible but highly active soil organisms. These organisms, the bacteria, fungi and protozoa, have been shown in recent years to play an active part in soil fertility and soil sanitation. A study will be made of their work in relation to ammonification, nitrification, and dentifrication; the influence of cropping and tillage on the flora and health of the crop; the economic use of fertilizers and lime; bacteria in relation to the fixation of nitrogen by legumes.

The laboratory work will consist of a quantitative and qualitative study of the types of flora, i. e., the ammonifiers, nitrifiers, nodule organisms, and some parasitic fungi from sick soils; measuring the rate of nitrification, fixation of atmospheric nitrogen, and ammonification in different soils variously manured, fertilized and limed. A brief study will be given to cereal-carried diseases which bring about sick soil conditions.

Elective for Seniors in Arts and Science and Seniors in Agriculture. One hour lecture and four hours laboratory. Second term.

Three credit hours

Vocational Agricultural Education

PROFESSOR HEIM

The Department of Vocational Agricultural Education has as its aim the preparation of high school teachers of Agriculture

under the Smith Hughes Act of 1917, and is supported by Federal appropriations supplemented by State appropriations.

The courses are arranged in accordance with certain requirements set up by the State Board for Vocational Education and approved by the Federal Board for Vocational Education. Students completing the courses are entitled to be certified for teaching vocational agriculture in any secondary school.

The classroom and laboratory instruction is supplemented by observation and practice teaching in state and federally aided approved schools of the State. Several visits to vocational schools of adjoining States will also be required during the Senior year.

A student preparing for vocational teaching will be required to take all the courses offered by this department and have at least two years of practical farm experience.

V A E 1 Vocational Education. (Prerequisites: Ed 3 and Psy 1). This course is designed to acquaint prospective high school teachers of vocational agriculture with the entire field of Vocational Education. The following topics will be emphasized: The history and development of Vocational Education from the early middle ages down to the present time; Meaning and social need of Vocational Education; The relation of Vocational Education to General Education; Principles of Method; Vocational Education for the Agricultural callings; Commercial Education; Industrial Education; Vocational Homemaking Education; Professional Education; The administration of Vocational Education; Training of Vocational Teachers; Special problems; Future problems; State and Federal Laws on Vocational Education; Probable Economic future of American women; Practical arts in General Education, etc. Junior year.

Three credit hours

V A E 2 Rural Sociology. (Prerequisite: V A E 1.) This course contemplates a study of rural social conditions with special reference to physical and occupational environment; Types of communities as results of the differentiating effects of environment; Rural and urban increase; Advantages and disadvantages

of farm life; Improvement of agricultural production, business, transportation and communication; Rural health, Recreation, and Sanitation; Community meetings; Social aspects of land and labor; Making farm life more attractive; Reading matter in rural homes and country life literature; Socialization of country life; Rural social institutions and their improvement; The school and the church and their relation to the community; The grange and other rural organizations; Rural charity and correction; Rural surveys and many other social agencies thru which changes may be effected. Junior year.

Three credit hours

V A E 3 Teaching Vocational Agriculture. Special Methods. (Prerequisites: V A E 1 and 2.) The application of the principles of education to the problems of vocational teaching and practice. Among the topics considered are a study of the purposes of vocational agriculture; selection of subject matter suited to local conditions; community surveys; agriculture in the curriculum; laboratory, field and home exercises; visual instruction; preparation of home project outlines and plans; project supervision; laboratory and library equipment; use and management of school plot; preparation of lesson plans; community activities; ethics of the teaching profession; professional improvement of teachers, etc.

The laboratory period will be used for the preparation of teaching material and for working out individual assignments connected with the course. Two hours recitation and two hours laboratory. Senior year.

Three credit hours

V A E 4 Observation and Practice Teaching. Prerequisites: V A E 1, 2 and 3.) The object of this course is to give students a knowledge of the best educational practices with respect to methods of teaching vocational agriculture in secondary schools, and to

offer opportunity to put those methods into practice. Students are required to visit approved High Schools where Agriculture is taught in this and adjoining states before being given an opportunity to put methods studied in V. A. E. 3 into practice in a schoolroom. A minimum of five hours of observation and practice teaching is required for certification. Senior year.

Two credit hours

V A E 5 Seminar. In order to keep abreast of the times, a weekly conference is held to study present-day literature dealing with Vocational Education and current events of vocational interest. Outside speakers are called in to assist in the discussion from time to time. Students enrolling for credit will select special subjects for study and will report progress from time to time. Senior year.

One credit hour

School of Engineering

Faculty

WALTER HULLIHEN, Ph. D. — *President*

GEORGE ABRAM HARTER, Ph. D.
Professor of Mathematics and Physics

EDWARD LAWRENCE SMITH, A. M.
Professor of Modern Languages and Literatures

MERRILL VANGIESEN SMITH, M. E.
Professor of Mechanical Engineering

WILBUR OWEN SYPHERD, Ph. D. — *Professor of English*

CHARLES LYNDALL PENNY, A. M., Sc. D., *Professor of Chemistry*

ERNEST VANCOURT VAUGHN, Ph. D.
Professor of History and Political Science

GEORGE CONGER PALMER, S. M., D. V. M.
Professor of Bacteriology and Hygiene

GEORGE ELLIOTT DUTTON, A. M. — *Professor of English*

CARLETON FRIEND MILLER, Ph. D. — *Professor of Chemistry*

GUY ERWIN HANCOCK, S. M., E. E. — *Professor of Physics*

HOWARD KENT PRESTON, C. E.
Professor of Engineering

ROBERT W. THOROUGHGOOD, C. E.
Professor of Civil Engineering

GEORGE ALBERT KOERBER, E. E.
Professor of Electrical Engineering

RALPH B. HARRIS, S. B., *Professor of Business Administration*

HAROLD EDWARD TIFFANY, S. M.
Associate Professor of Chemistry

REINHOLD EUGEN SALESKI, A. M.
Assistant Professor of Modern Languages and Literatures

FINLEY MELVILLE KENDALL FOSTER, Ph. D.
Associate Professor of English

GEORGE ELDER BRINTON, Ph. B.
Assistant Professor of Modern Languages and Literatures

RAYMOND WATSON KIRKBRIDE, S. B.
Assistant Professor of Modern Languages and Literatures

THOMAS DARMORE SMITH, S. B.
Assistant Professor of Mathematics

JOHN LINTON COYLE — *Instructor in Shop Work*

LEO BLUMBERG, E. E. — *Instructor in Engineering*

WILLIAM FRANCIS LINDELL, S. B.
Instructor in Mechanical Engineering
ERNEST CANFIELD VANKEUREN, A. B. *Instructor in English*
CARL SEIB RANKIN, C. E.
Instructor in Civil and Electrical Engineering

SCOPE OF THE WORK

The School of Engineering offers instruction in Chemical, Civil, Electrical, and Mechanical Engineering. Upon the satisfactory completion of the work offered by any of the Divisions of Engineering the student receives the degree of Bachelor of Science (B. S.).

The work given in the engineering school comprises the essentials of a liberal education in addition to a thorough grounding in the fundamental principles of those branches of engineering which are offered in the School.

The curricula of the School consist almost entirely of required subjects, few electives being offered. By the adoption of this policy a maximum concentration of effort on the part of both the students and the faculty is made possible. All studies which are included in the several curricula are considered essential to the training of an educated engineer.

In addition to fulfilling the specific requirements for graduation as laid down in the statements of the four Divisions of Engineering, candidates for graduation must also attain the grade of B or better in at least 50 per cent of the prescribed number of credit term-hours of work.

Division of Civil Engineering

The department of Civil Engineering provides instruction, by means of recitation, lecture, drawing room, laboratory, and visit of inspection, in the subjects which are essential in either highway, railroad, municipal, structural, or concrete engineering. A thorough preparation in mathematics and mechanics is necessary to an understanding of the applied subjects in civil engineering, so that the work of the first two years is largely given over to the study of these and other fundamental subjects. In the last two years subjects more closely allied to the work of the civil engineer make up a major part of the work.

The laboratories of the division provide the means for a first-hand study of the behavior of materials under stress. The general testing laboratory is equipped with machinery for testing materials in shear, tension, compression, bending, and torsion; and other apparatus is available for testing cement, sand, and concrete. The recent addition of a number of machines for testing road materials provides the means for testing road building rock and paving brick.

A summer school in surveying is held for a period of two weeks at the end of both the Freshman and Sophomore years, at which attendance is required of civil engineering students.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
History, 3	1	1	Modern Language, 4, or 64.....	3	3
Modern Language, 3, or 63.....	3	3	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Enginee'ng, 21	3	1.5	Mech. Enginee'ng, 22	3	1.5
Mech. Enginee'ng, 57	1.5	.5	Mech. Enginee'ng, 58	1.5	.5
	20.5	16.0		23.5	17.5

Military Science, 1..	3	1.5	Military Science, 2..	3	1.5
	23.5	17.5		26.5	19

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Physics, 7	3	1.5	Physics, 8	3	1.5
Civil Engineering, 23	4	2.5	Civil Engineering, 24	4	2.5
Mech. Enginee'ng, 25	5	3.5	Mech. Enginee'ng, 26	5	3.5
	23	18.5		23	18.5
Military Science, 3..	3	1.5	Military Science, 4..	3	1.5
	26	20.0		26	20.0

JUNIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
Mathematics, 11	4	4	Mathematics, 12	4	4
Geology, 31	2	2	Geology, 32	2	2
Hygiene, 3.....	1	1	Hygiene, 4	1	1
Civil Engineering, 25	6	4.5	Civil Engineering, 26	6	4.5
Civil Engineering, 27	4	2.5	Civil Engineering, 6..	3	3
Mech. Engineering, 1	3	3	Civil Engineering, 18	3	3
Elec. Engineering, 11	4	3	Mech. Engineering, 2	3	3
	22	20		22	20.5
Military Science, 5..	3	1.5	Military Science, 6..	3	1.5
	27	21.5		25	22

SENIOR CLASS

First Term	H.	C.	*Second Term*	H.	C.
English, 7	1	1	English, 8	1	1
Business, 3	3	3	Business, 4	3	3
Civil Engineering, 5..	3	3	Civil Engineering, 10	8	5
Civil Engineering, 7..	3	3	Civil Engineering, 16	7	5.5
Civil Engineering, 9..	9	6	Civil Engineering, 20	5	3.5
Civil Engineering, 29	3	1.5		24	18.0
	22	17.5	Military Science, 8..	3	1.5
Military Science, 7..	3	1.5		27	19.5
	25	19			

Division of Mechanical Engineering

The instruction which is offered in the Division of Mechanical Engineering comprises those studies which are fundamental to the profession of mechanical engineering. The courses of study offered treat of the development of power, its transmission, and its use. The instruction given includes the principles of the design and mechanical construction of steam engines, gas engines, steam turbines, and steam boilers, the theory and practice of their operation, and a consideration of their efficiencies; the theory and principles of the design of other machines; and the principles and methods of testing motive-power equipment and other machinery.

The aim of the instruction is to train young men for positions of responsibility in the engineering world. Special stress is laid on fundamental principles.

The plan of instruction is systematic and thorough. It includes the fundamental studies of English, mathematics, chemistry, physics, French or German, and history and the more technical subjects of kinematics, machine design, direct and alternating current electricity, thermodynamics, heat engines and the principles of laboratory practice.

During the second term of the fourth year every candidate for graduation must present a satisfactory thesis which shall embody the results of some investigation he personally has made. The thesis must be typewritten and must be accompanied by such drawings and other sheets as are necessary to illustrate and explain the subject.

The Division of Mechanical Engineering has a well-lighted, airy drafting room; a machine shop equipped with a variety of machines and tools; and a small but serviceably equipped mechanical laboratory and a variety of small apparatus.

Students are required to furnish all instruments and materials used in the drafting-room. The materials must conform strictly to standards of the Department of Mechanical Drawing, and the instruments must meet with the approval of the instructors.

Young men who study Mechanical Engineering are required to pay certain laboratory and shop fees. For a statement of fees and other expenses see page 136.

REQUIREMENTS FOR GRADUATION

The following table of Requirements for Graduation gives the name and number of each course of study required for graduation, together with the number of actual hours of work required per week in the subject and the credit hours allowed for the course. A detailed description of the work given in each course will be found on pages 119-131.

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4, or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Enginee'ng, 21	3	1.5	Mech. Enginee'ng, 22	3	1.5
Mech. Enginee'ng, 51	1.5	.5	Mech. Enginee'ng, 52	1.5	.5
	20.5	16.0		23.5	17.5
Military Science, 1	3	1.5	Military Science, 2	3	1.5
	23.5	17.5		26.5	19

SOPHOMORE YEAR

First Term	H.	C.
English, 3	2	2
Mathematics, 5	4	4
Physics, 5	5	5
Physics, 7	3	1.5
Mech. Enginee'ng, 25	5	3.5
Mech. Enginee'ng, 53	3	1
	22	17.0
Military Science, 3	3	1.5
	25	18.5

Second Term	H.	C.
English, 4	2	2
Mathematics, 6	4	4
Physics, 6	5	5
Physics, 8	3	1.5
Mech. Enginee'ng, 26	5	3.5
Mech. Enginee'ng, 54	3	1
	22	17.0
Military Science, 4	3	1.5
	25	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Enginee'ng, 1	3	3
Mech. Enginee'ng, 27	3	1.5
Mech. Enginee'ng, 29	4	3
Mech. Enginee'ng, 55	3	1
	23	17.0
Military Science, 5	3	1.5
	26	18.5

Second Term	H.	C.
Mathematics, 12	4	4
Civil Engineering, 6	3	3
Elec. Engineering, 2	3	3
Elec. Engineering, 42	3	1.5
Mech. Enginee'ng, 2	3	3
Mech. Enginee'ng, 28	3	1.5
Mech. Enginee'ng, 30	2	1
Mech. Enginee'ng, 56	3	1
	24	18.0
Military Science, 6	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Business, 3	3	3
Civil Engineering, 7	3	3
Elec. Engineering, 3	3	3
Elec. Engineering, 45	3	1.5
Mech. Enginee'ng, 3	2	2
Mech. Enginee'ng, 5	5	5
Mech. Enginee'ng, 41	6	3
	26	21.5
Military Science, 7	3	1.5
	29	23

Second Term	H.	C.
English, 8	1	1
Business, 4	3	3
Elec. Engineering, 4	3	3
Elec. Engineering, 46	3	1.5
Mech. Enginee'ng, 4	2	2
Mech. Enginee'ng, 6	5	5
Mech. Enginee'ng, 42	6	3
	23	18.5
Military Science, 8	3	1.5
	26	20

Division of Electrical Engineering

The Courses in Electrical Engineering aim to give the student not only a thorough technical training, but also a liberal education which will enable him to undertake the great variety of problems which present themselves to an engineer. Besides offering instruction in purely technical studies, the courses include the subjects of English Composition, English Literature, History, French or German, Mathematics, Physics, Mechanics, Chemistry, and Business.

Theoretical work is taught by means of lectures and recitations. The texts used are supplemented by technical periodicals and by numerous problems taken from current practice.

Practical work in electrical laboratories begins with the Junior year and continues to the end of the Senior year. In these laboratories are illustrated the principles taught in the class-room.

Inspection trips made to engineering plants help to bring before the student the conditions to be met with in actual practice.

Every candidate for graduation is required to present a satisfactory thesis embodying the results of some investigation which he has made. This thesis, which must be typewritten, must be accompanied by such drawings and other sheets as are necessary to illustrate and explain the subject. It must be approved by the English Department before it will be accepted.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.
English, 1	3	3
Modern Language, 3, or 63	3	3
History, 3	1	1
Mathematics, 3	4	4
Chemistry, 11	2	2
Chemistry, 13	3	1
Mech. Enginee'ng, 21	3	1.5
Mech. Enginee'ng, 51	1.5	.5
	20.5	16.0
Military Science, 1	3	1.5
	23.5	17.5

Second Term	H.	C.
English, 2	3	3
Modern Language, 4, or 64	3	3
Mathematics, 4	4	4
Chemistry, 12	2	2
Chemistry, 14	3	1
Civil Engineering, 22	4	2.5
Mech. Enginee'ng, 22	3	1.5
Mech. Enginee'ng, 52	1.5	.5
	23.5	17.5
Military Science, 2	3	1.5
	26.5	19

SOPHOMORE YEAR

First Term	H.	C.
English, 3	2	2
Mathematics, 5	4	4
Physics, 5	5	5
Physics, 7	3	1.5
Mech. Enginee'ng, 25	5	3.5
Mech. Enginee'ng, 53	3	1
	22	17.0
Military Science, 3	3	1.5
	25	18.5

Second Term	H.	C.
English, 4	2	2
Mathematics, 6	4	4
Physics, 6	5	5
Physics, 8	3	1.5
Mech. Enginee'ng, 26	5	3.5
Mech. Enginee'ng, 54	3	1
	22	17.0
Military Science, 4	3	1.5
	25	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Enginee'ng, 1	3	3
Mech. Enginee'ng, 27	3	1.5
Mech. Enginee'ng, 29	4	3
Mech. Enginee'ng, 55	3	1
	23	17.0
Military Science, 5	3	1.5
	26	18.5

Second Term	H.	C.
Mathematics, 12	4	4
Civil Engineering, 6	3	3
Elec. Engineering, 2	3	3
Elec. Engineering, 32	3	1.5
Elec Engineering, 42	3	1.5
Mech. Enginee'ng, 2	3	3
Mech. Enginee'ng, 30	2	1
Mech. Enginee'ng, 56	3	1
	24	18.0
Military Science, 6	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Business, 3	3	3
Civil Engineering, 7	3	3
Elec. Engineering, 3	3	3
Elec. Engineering, 7	2	2
Elec. Engineering, 43	6	3
Mech. Enginee'ng, 5	5	5
Mech. Enginee'ng, 43	3	1.5
	26	21.5
Military Science, 7	3	1.5
	29	23

Second Term	H.	C.
English, 8	1	1
Business, 4	3	3
Elec. Engineering, 4	3	3
Elec. Engineering, 6	2	2
Elec. Engineering, 8	2	2
Elec. Engineering, 44	6	3
Mech. Enginee'ng. 6	5	5
Mech. Enginee'ng, 44	3	1.5
	25	20.5
Military Science, 8	3	1.5
	28	22

Division of Chemical Engineering

The Chemical Engineering curriculum is designed to prepare students for work in Chemistry as applied in the various industries. Besides the fundamental branches of inorganic, organic and analytical Chemistry, it includes Chemical Calculation, Electrochemistry, Theoretical and Physical Chemistry, Synthetic Organic Chemistry, and the more important processes of manufacturing and industrial Chemistry; also some important branches of Mechanical and Electrical Engineering, and subjects of general educational value such as Mathematics, Physics and Language.

During the Junior and Senior years students in charge of a member of the faculty visit various industrial plants in order to supplement the class-room instruction with an inspection of the apparatus and processes used in practice.

The subjects studied in the last two years are particularly useful in the industries. In addition to pure mathematics, much attention is given to the mathematics of chemistry. The calculations made in analysis and in chemical industries are studied carefully both in special courses known as "calculations" and in gas analysis, electrochemistry and physical chemistry. The student solves problems involved in reactions and processes, and afterwards discusses them in the class-room.

A laboratory course of six hours weekly is given in "organic preparations." This covers the making of many of the more important organic substances, including some of the simpler dyes.

The methods of analyzing illuminating gas and flue gases are studied, and the analyses are made by the students under direction of an instructor in the laboratory; the economic relations of the gas analyses to heat production and fuel consumption are studied by means of problems and mathematical calculations.

Particular attention is given to the more important manufacturing and industrial processes, the materials used and the products, such as general processes and apparatus, water for industrial purposes, fuels, destructive distillation, iron, steel and alloys, ceramics, cements, paints and varnishes, fertilizers, acids, alkalies, chlorine and bleach, oils and fats, paper, textiles and the like. Visits are made by the students to manufacturing plants and such visits are found to be a most valuable aid to the instruction of the classroom.

CLUBS

The upper classmen have formed a voluntary society, "The Wolf Chemical Club," which is under their own management. The club meets periodically to hear papers on chemical subjects prepared by members of the club and to discuss matters of interest to chemists. During the year prominent lecturers speak before the club on their special subjects.

There is also a club whose object it is to read together the most important articles appearing in the chemical journals. It meets monthly under the direction of a member of the faculty, who assigns to each student an article for review and summary at a subsequent meeting.

These clubs are most helpful to the members because they arouse interest in chemistry and bring a closer contact with the outside world. Upper classmen are eligible to both clubs.

THESIS

In the Senior year students of chemical engineering undertake an original investigation on some assigned subject, and prepare a thesis reporting the results and conclusions reached.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.
English, 1	3	3
Modern Language, 3, or 63	3	3
History, 3	1	1
Mathematics, 3	4	4
Chemistry, 11	2	2
Chemistry, 15	6	2
Mech. Engineering, 21	3	1.5
	22	16.5
Military Science, 1	3	1.5
	25	18

Second Term	H.	C.
English, 2	3	3
Modern Language, 4, or 64	3	3
Mathematics, 4	4	4
Chemistry, 12	2	2
Chemistry, 16	6	2
Mech. Engineering, 22	3	1.5
	21	15.5
Military Science, 2	3	1.5
	24	17

SOPHOMORE YEAR

First Term	H.	C.
English, 3	2	2
Modern Language, 5, or 65	3	3
Mathematics, 5	4	4
Physics, 1	3	3
Chemistry, 21	3	3
Chemistry, 23	6	2
	21	17.0
Military Science, 3	3	1.5
	24	18.5

Second Term	H.	C.
English, 4	2	2
Modern Language, 6, or 66	3	3
Mathematics, 6	4	4
Physics, 2	3	3
Chemistry, 22	3	3
Chemistry, 24	6	2
	21	17.0
Military Science, 4	3	1.5
	24	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Chemistry, 33	2	2
Chemistry, 35	6	2
Chemistry, 37	3	1
Geology, 31	2	2
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Engineering, 1	3	3
	26	18.5
Military Science, 5	3	1.5
	29	20

Second Term	H.	C.
Mathematics, 12	4	4
Chemistry, 34	2	2
Chemistry, 36	6	2
Geology, 32	2	2
Elec. Engineering, 2	3	3
Elec. Engineering, 42	3	1.5
Mech. Engineering, 2	3	3
	23	17.5
Military Science, 6	3	1.5
	26	19

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Chemistry, 31	3	3
Chemistry, 41	3	3
Chemistry, 43	3	3
Chemistry, 47	12	4
Mech. Engineering, 3	2	2
	24	16
Military Science, 7	3	1.5
	27	17.5

Second Term	H.	C.
English, 8	1	1
Chemistry, 32	3	3
Chemistry, 42	3	3
Chemistry, 44	5	3
Mech. Engineering, 4	2	2
	14	12
Military Science, 8	3	1.5
	17	13.5

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers to second term courses.

BACTERIOLOGY, PHYSIOLOGY, AND HYGIENE

PROFESSOR PALMER

Hyg 3 and 4 Hygiene and Sanitation.
Two credit hours

For a detailed statement of this course, see School of Arts and Science, page 45.

BUSINESS ADMINISTRATION AND ECONOMICS

PROFESSOR HARRIS

Bus 3 and 4 Business Law.
Six credit hours

For a detailed statement of this course, see School of Arts and Science, page 50.

CHEMISTRY

PROFESSOR PENNY, PROFESSOR MILLER, AND ASSOCIATE PROFESSOR TIFFANY

C 11 and 12 Inorganic Chemistry.
Four credit hours

C 13 and 14 Qualitative Analysis.
Two credit hours

C 15 and 16 Qualitative Analysis.
Four credit hours

C 21 and 22 Organic Chemistry.
Six credit hours

C 23 Quantitative Analysis.
Two credit hours

C 24 Advanced Quantitative Analysis.
Two credit hours

C 31 and 32 Industrial Chemistry.
Six credit hours

C 33 and 34 Chemical Calculations.
Four credit hours

C 35 and 36 Organic Preparations.
Four credit hours

C 37 Gas Analysis.
One credit hour

C 41 and 42 Physical Chemistry.
Six credit hours

C 43 and 44 Electro Chemistry.
Six credit hours

C 47 and 48 Technical Analysis.
Four credit hours

C 50 Thesis. Senior Year.

For a detailed statement of these courses, see School of Arts and Science, page 51.

CIVIL ENGINEERING

PROFESSOR THOROUGHGOOD, PROFESSOR PRESTON, AND MR. RANKIN

CE 5 Hydraulics. (Prerequisites: M 11 and M 12.) Physical properties of water; pressure and pressure heads; piezometers and gauges; normal pressure and centre of pressure; pressure on immersed bodies and depth of flotation; effects of translation and rotation; the standard orifice; coefficients of the orifice; losses in orifice; discharge under falling head; measurements by weirs; study of flow in pipes and in open channels; dynamic action of jets; theory of water wheels. Recitations.

PROFESSOR THOROUGHGOOD *Three credit hours*

CE 6 and 7 Mechanics of Materials. (Prerequisites: M 11; Ps 7 and 8.) Theory of simple tension, compression, shear, and bending; elasticity and modulus of elasticity; unit stress values, factors of safety; properties of materials; beams and bars of uniform strength; rivets and riveted joints; shears, moments, and deflections in simple, cantilever, fixed, and continuous beams; stresses in thin pipes, cylinders, and spheres; shrinkage stresses; theory of column formulae; theory of torsion in shafts, cranks, and pins; combined stresses; compound beams and bars and reinforced concrete; resilience, work, and least work; steady, impact, and sudden loads and fatigue of materials; true stresses; theory of thick cylinders and guns; rollers, plates, and spheres; testing of materials. Recitations.

PROFESSOR THOROUGHGOOD *Six credit hours*

CE 9 and 10 Structures. (Prerequisites: M 11 and CE 6.) Study of structural materials, designing, and fabrication; fundamental elements of mechanics applied to structures; centres of gravity, moments of inertia, radius of gyration; conditions of loading for maximum shears, moments, and stresses; influence line diagrams; design of girders and bridges; steel viaducts and buildings; design of highway bridges. Drawing room computations and designs of beam, girder, and truss bridges. First term, recitations three hours; design and drawing six hours. Second term, recitations two hours; design and drawing six hours.

PROFESSOR THOROUGHGOOD. *Six credit hours first term and five credit hours second term*

CE 16 Municipal Engineering and Reinforced Concrete. (Prerequisites: CE 6 and 7.) Types of sewerage systems; factors in sewer design; construction of sewers; methods of treating sewage; specifications. Sources of water supply; filtration of water; gravity and pumping systems; storage of water, reservoirs, and dams; designing of water systems; distrib-

uting systems, fire service. Theory of reinforcement in concrete; reinforced beams and girders; box and arch culverts and bridges. Recitations four hours; drawing three hours.

PROFESSOR THOROUGHGOOD *Five and one-half credit hours*

CE 18 Structures. (Prerequisites: M 11 and C E 27.) Theory of the determination of stresses in roof and bridge trusses by analytical methods; dead, live, snow, and wind load determinations; maximum and minimum stresses; study of different types of bridges; portals and lateral bracing; trusses, bents and towers; cantilever and hinged trusses. Recitations.

PROFESSOR PRESTON *Three credit hours*

CE 20 Highways and Highway Laboratory. (Prerequisites: CE 7 and CE 29.) Highway legislation; preliminary investigations and surveys; earth, sand, clay, gravel, and broken stone roads; bituminous and asphalt road materials; brick, wood block, and stone block and concrete roads; sanitation of streets and roads; highway structures and drainage; study of road material testing. Standard tests of various road-making materials, covering abrasion, toughness, hardness; analyses and tests of sand; standard rattler tests and transverse and absorption tests of paving brick; tests of concrete and the effects of hydrated lime. Recitations two hours; laboratory three hours.

PROFESSOR PRESTON *Three and one-half credit hours*

CE 22 Surveying. (Prerequisite: M 3.) Study of the chain, compass, transit, and level; errors in measurements; adjustments of instruments; double meridian distances; computations of areas. Field exercises in the use of the chain, transit, and level; mapping and plotting. Recitations one hour; drawing or field three hours.

MR. RANKIN *Two and one-half credit hours*

CE 23 and 24 Surveying. (Prerequisites: CE 22 and M 4.) Profile and differential leveling; theory

of stadia and stadia measurements; city and topographical surveying, contours; mine surveying; methods of computing and plotting; solar observations; the slide rule. Recitations two hours; drawing or field two hours.

MR. RANKIN *Two and one-half credit hours*

CE 25 and 26 Higher Surveying and Railroads. (Prerequisites: CE 24 and M 6.) Theory of triangulation; study of base line measurements; precision measurements of angles; latitude, longitude, and time determinations; precision and trigonometric leveling; use of barometer, plane table, and sextant; hydrographic surveying and soundings; map projections. Simple, compound, and reversed curves; spirals; earthwork and the mass diagram. Field and drawing exercises. Recitations three hours; drawing or field three hours.

MR. RANKIN *Four and one-half credit hours*

CE 27 Graphic Statics. (Prerequisited: M 6.) Graphical methods applied to the solution of stresses in trusses; theory of force triangle and force polygon; concurrent and nonconcurrent forces; composition and resolution of force; moments and centre of gravity by graphics; graphical solutions for reactions and stresses from dead, live, snow, and wind loads in roof trusses; cantilever and other types of trusses. Recitations one hour; drawing three hours.

PROFESSOR PRESTON *Two and one-half credit hours*

CE 29 Cement and General Testing Laboratory. (Prerequisite: CE 8.) American Society for Testing Materials standard tests on several brands of cement; comparative tests in tension, compression, and bending on neat cement and mortar specimens, using standard and local sand; mechanical analysis of sand, specific gravity, and tests for organic matter; comparison of results of fineness test obtained with standard hand process, and mechanical method. Standard tests of wrought iron, cast iron, and steel; tests

of various woods in tension, compression, and bending; determination of elastic limit and modulus of elasticity of iron, steel, and wood. Three laboratory hours.

PROFESSOR PRESTON *One and one-half credit hours*

ELECTRICAL ENGINEERING

PROFESSOR GEORGE A. KOERBER, MR. L. BLUMBERG, AND MR. C. S. RANKIN

EE 1 Direct Currents. Theory of the direct current dynamo; shunt, series, and compound wound field magnets; ring and drum windings; commutators; direct current motors. Operation, regulation, and methods of testing dynamos and motors. Study of motor and dynamo characteristics. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

EE 2 Alternating Currents. The elementary principles of alternating currents. Inductance and capacity; harmonic electromotive force; single and polyphase circuits. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

EE 3 and 4 Alternating Currents. Continuation of EE 2. Advanced theoretical studies of alternators, synchronous motors, and synchronous converters. High voltage long distance transmission; transmission line phenomena; methods and practice of securing most reliable service. Required of Seniors in Mechanical and Electrical Engineering. Three hours a week.

PROFESSOR KOERBER *Six credit hours*

EE 6 Wireless Telegraphy and Telephony. A study of modern systems with a review of the historical developments. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 7 Electrical Power Plant Engineering. A study of the design and operation of power plants and substations. Required of Seniors in Electrical Engineering. Two hours per week.

PROFESSOR KOERBER *Two credit hours*

EE 8 Electric Railways. The construction, equipment, and operation of different types of electric railways. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 11 Dynamo Electric Machinery. (Prerequisites: Ps 5 and 6.) Theory and application of both direct and alternating current machinery. Required of Juniors in Civil Engineering. Four hours a week, two hours of laboratory and two hours of recitation.

MR. BLUMBERG *Three credit hours*

EE 32 Electrical Design. The calculation, design, and construction of direct current machinery. Required of Juniors in Electrical Engineering. Three hours a week.

PROFESSOR KOERBER *One and one-half credit hours*

EE 41 and 42 Electrical Laboratory. Determination of characteristic curves; efficiencies and magnetic leakage of direct current dynamos and motors. Test of arc and incandescent lamps. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER AND MR. RANKIN
One and one-half credit hours

EE 43 and 44 Electrical Laboratory. Efficiencies and characteristic curves of alternators, synchronous motors, induction motors, and transformers. Required of Seniors in Electrical Engineering. Six hours a week.

PROFESSOR KOERBER *Six credit hours*

EE 45 and 46 Electrical Laboratory. Testing of alternating current machinery and apparatus. Re-

quired of Seniors in Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER — *Three credit hours*

ENGLISH

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, AND MR. VAN KEUREN

E 1 and 2 Freshman Composition.

Six credit hours

E 3 and 4 Sophomore Literature.

Four credit hours

E 7 and 8 Senior Technical English.

Two credit hours

For a detailed statement of these courses, see School of Arts and Science, page 58.

GEOLOGY AND MINERALOGY

PROFESSOR PENNY AND PROFESSOR MILLER

Geol 31 Mineralogy.

Three credit hours

Geol 32 Geology.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science, page 61.

HISTORY AND POLITICAL SCIENCE

PROFESSOR VAUGHN

H 3 History and Government of Delaware.

One credit hour

For a detailed statment of this course, see School of Arts and Science, page 62.

MATHEMATICS

PROFESSOR HARTER, PROFESSOR PRESTON, ASSISTANT PROFESSOR T. D. SMITH, AND ASSISTANT PROFESSOR REES

M 3 College Algebra.

Four credit hours

M 4 Advanced Algebra and Trigonometry.
Four credit hours

M 5 Analytic Geometry.
Four credit hours

M 6 Calculus.
Four credit hours

M 11 and 12 Theoretical Mechanics.
Eight credit hours

M 24 Solid Geometry.
No credit

For a detailed statement of these courses, see School of Arts and Science, page 64.

MECHANICAL ENGINEERING

PROFESSOR M. VAN G. SMITH, MR. J. L. COYLE, MR. L. BLUMBERG, AND MR. W. F. LINDELL

ME 1 Elements of Steam Engineering. (Prerequisites: Ps 5 and 6.) A general description of engines and boilers; their fundamental principles; detailed description of their parts; the reasons for using various elements of construction; steam pumps and feed-water heaters; condensers; slide valves and valve setting; the steam engine indicator and reducing motions; indicated and brake horsepower; free-hand sketches of parts of engines and boilers; practice in the use of an engineering vocabulary. Required of all Juniors in Engineering. Three hours a week.
MR. BLUMBERG *Three credit hours*

ME 2 The Steam Engine. (Prerequisite: ME 1.) The fundamental principles of the simple steam engine; multiple expansion engines; the basic principles of steam turbines; valve gears; governing; a description of the various types of steam calorimeters; the methods of measuring temperature and pressure; the measurement of power; general instructions regarding testing; the principles of steam engine and boiler testing; practice in speaking on technical and engineering subjects. This course is preparatory to courses

ME 5 and 6 and ME 41 and 42. Required of all Juniors in Engineering. Three hours a week.

MR. BLUMBERG *Three credit hours*

ME 3 and 4 Thermodynamics. (Prerequisites: M 11 and 12.) The fundamental laws of the mechanical theory of heat and their application to gases, saturated and superheated vapors; the theory of steam, air and gas engines, and refrigeration machines. Required of Seniors in Chemical and Mechanical Engineering. Two hours a week.

PROFESSOR SMITH *Four credit hours*

ME 5 and 6 Heat Engines and Boilers. The principles, theory, and construction of the steam engine. The fundamental principles, the theory, and the construction of steam turbines. The theory and principles of the gas engine; its construction and operation; gas producers. The principles and practice of the efficient combustion of fuels, and the design and construction of steam boilers. Required of Seniors in Electrical and Mechanical Engineering. Five hours a week.

PROFESSOR SMITH *Ten credit hours*

ME 21 and 22 Mechanical Drawing. The care and use of instruments and materials; lettering; section lining; geometrical problems; curve drawing; orthographic projections; the intersection and development of surfaces; isometrics; the layout of elementary machine parts. Required of all Freshmen in Engineering. Three hours a week.

MR. BLUMBERG AND MR. LINDELL *Three credit hours*

ME 25 and 26 Mechanical Drawing and Descriptive Geometry. The solution of problems relating to points, lines, planes, and surfaces, with practical applications and drawing-room work. Detailed working drawings and assembly drawings; free-hand sketching from machine parts; tracing; blue-printing; computations and drawings made by the use of empirical

formulas; structural drawing; the use of handbooks. Required of Sophomores in Civil, Electrical, and Mechanical Engineering. Five hours a week.

MR. BLUMBERG AND MR. LINDELL *Seven credit hours*

ME 27 Machine Drawing and Design. The design of machine parts by the aid of formulas and handbooks. The elementary theory and principles of the design of machinery. Required of Juniors in Electrical and Mechanical Engineering. Three hours a week.

MR. BLUMBERG *One and one-half credit hours*

ME 28 Machine Design. The theory and principles of the design of machinery and their application to the design of special parts, comprising the calculation of all stresses and the necessary distribution of metal to withstand the stresses; properties and uses of materials; bearings and lubrication. Computations and drawing. Required of Juniors in Mechanical Engineering. Three hours a week.

PROFESSOR SMITH AND MR. BLUMBERG
One and one-half credit hours

ME 29 Kinematics. The laws of constrained motion; combinations of pure mechanism; rolling and sliding contact; velocity diagrams; linkwork; cams; forms of gear teeth. The general theory of slide valve and link motions. Required of Juniors in Electrical and Mechanical Engineering. Two hours' recitation and two hours' drafting a week.

MR. LINDELL *Three credit hours*

ME 30 Valve Gears. The application of the Zeuner diagram to the design of the principal slide-valve gears. This course is a continuation of course ME 29. Required of Juniors in Electrical and Mechanical Engineering. Two hours of computation and drafting a week.

MR. LINDELL *One credit hour*

ME 41 and 42 Experimental Engineering. The calibration of instruments; brake and efficiency tests of engines; tests of boilers, steam turbines, steam pumps, blowers, air compressors, gas engines, and condensers; hydraulic measurements; calculations and reports. Required of Seniors in Mechanical Engineering. Six hours a week.

PROFESSOR SMITH *Six credit hours*

ME 43 and 44 Experimental Engineering. A course similar to ME 41 and 42. Required of Seniors in Electrical Engineering. Three hours a week.

PROFESSOR SMITH *Three credit hours*

ME 51 and 52 Pattern Making. The care and general use of wood-working tools; the principles of pattern making; patterns for machine parts; core boxes; core making; dry sand molding. Required of Freshmen in Electrical and Mechanical Engineering. Three hours every other week.

MR. COYLE *One credit hour*

ME 53 and 54 Machine Work. Exercises in metal turning, facing, boring, drilling, thread chasing, planing and milling; the use of metal-working hand tools; chipping and filing. Required of Sophomores in Electrical and Mechanical Engineering. Three hours a week.

MR. COYLE *Two credit hours*

ME 55 and 56 Metal Work and Forging. The construction of machine parts; finishing and assembling; forging; tool dressing and tempering. Required of Juniors in Electrical and Mechanical Engineering. Three hours a week.

MR. COYLE *Two credit hours*

ME 57 and 58 Machine Work. A course similar to ME 53 and 54. Required of Freshmen in Civil Engineering. Three hours every other week.

MR. COYLE *One credit hour*

MILITARY SCIENCE AND TACTICS

MAJOR LATHE B. ROW, Infantry

Mil 1 and 2

Three credit hours

Mil 3 and 4

Three credit hours

Mil 5 and 6

Three credit hours

Mil 7 and 8

Three credit hours

For a detailed statement of these courses, see School of Arts and Science, page 66.

MODERN LANGUAGES AND LITERATURES

PROFESSOR E. L. SMITH, ASSISTANT PROFESSOR SALESKI, ASSISTANT PROFESSOR BRINTON, AND ASSISTANT PROFESSOR KIRKBRIDE

ML 3 and 4 Intermediate French.

Six credit hours

ML 5 and 6 Advanced French.

Six credit hours

ML 21 and 22 Elementary Spanish

Six credit hours

ML 63 and 64 First Year College German.

Six credit hours

ML 65 and 66 Second Year College German.

Six credit hours

For a detailed statement of these courses, see School of Arts and Science, page 69.

PHYSICS

PROFESSOR HANCOCK

Ps 5 and 6 General Physics.

Ten credit hours

Ps 7 and 8 Physical Laboratory.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science, page 74.

THE SUMMER SCHOOL

Each year there is held at the College, under the direction of the Department of Education of the University of Delaware, a Summer School of six weeks' duration. This is essentially a teachers' training school. The work offered includes courses in the common school branches, methods of teaching, and a limited number of advanced courses. Thus the needs of all classes of teachers are provided for, but special attention is given to the needs of rural and elementary teachers.

Tuition is free to Delaware teachers. Furthermore, the State, under certain conditions, pays the room, board, and transportation expenses of those who teach in Delaware during the ensuing year.

The session for 1921 will be held from June 27 to August 5, inclusive. Complete information concerning the session will be furnished by the Director of the Summer School.

GRADUATE AND RESEARCH WORK

The University offers facilities for advanced study and research in certain departments. Such study or research may be undertaken either in candidacy for the Master's degree or as an independent project. The Experiment Station, with its corps of investigators devoting their entire time to scientific research, affords especial advantages for and stimulus to research in problems in the fields of chemistry, biology, and related subjects. All graduate work for advanced degrees as well as all research work by members of the faculty and others is under the supervision of the Committee on Advanced Degrees, Graduate Study, and Research, and applications for financial or other assistance from the Board of Trustees and all other matters relating to graduate study and research must be referred to that Committee.

MASTER'S DEGREE

The Master's degree is awarded to graduate students who have shown marked proficiency in advanced liberal studies or ability to do original work. Each candidate must complete successfully a course of graduate study in accordance with the following regulations:

Committee in Charge of Graduate Work

The work of all candidates for the Master's degree is under the general supervision of the Committee on Advanced Degrees and the immediate direction of the department in which the major is taken, the instructor in charge serving as a member of the Committee for the consideration of all matters pertaining to the candidate's work.

Admission

Formal application, including a statement of the proposed program of study as approved by the instructor in charge of the major subject, must be submitted to the Committee on Advanced Degrees for approval. Students are advised to mature their plans and make application before the opening of the college year. As a rule applications submitted later than October 1st cannot be approved.

Program of Study

Graduates of the University of Delaware or of any college of approved standing may, on the satisfactory completion of an approved program of study, receive the degree of Master of Arts or Master of Science. The minimum amount of work accepted for either degree is one full year (the equivalent of thirty semester hours) of resident graduate study.

The program of study may include work in one or more departments or fields of study, provided not less than one-half is devoted to a major subject and the whole shows a consistent plan pursued with a definite purpose. The major must include a piece of research or constructive work representing the equivalent of not less than five semester hours of credit. The report on this work is to be presented in the form of a thesis, approved by the department in which the major is taken, and must be filed with the Registrar at least two weeks before Commencement Day.

Transfer of Undergraduate Credit

Advanced undergraduate courses may in cases approved by the Committee on Advanced Degrees be taken to apply toward the requirements of the minor subjects, not to exceed six credit hours, but extra credit earned during the undergraduate course may not be transferred for graduate credit except as fol-

lows: If at the beginning of the first or second semester of his senior year a student has so far completed his work for the Bachelor's degree that his program is not full, he may elect one or more courses which may count toward the Master's degree, subject to the approval of the Committee.

Character of Master's Degree

The Master's degree conferred depends upon the character of the Bachelor's degree preceding it. The M. A. follows the B. A., the M. S. follows the B. S. This practice may, in the discretion of the Committee, be departed from in cases where the undergraduate degree was obtained in an institution which gives the B. A. degree only in the College of Arts and Science.

A graduate of any of the courses in Engineering who has been engaged in acceptable professional work for a period of not less than three years after receiving the degree of Bachelor of Science, or two years after receiving the degree of Master of Science, may be awarded the professional degree of C. E., M. E., E. E., or Ch. E., according to the undergraduate course pursued. A candidate for one of these degrees must declare his candidacy and file with the Committee on advanced Degrees a detailed statement covering his professional study and experience not later than October 1 preceding the commencement at which he proposes to qualify. Prior to May 1 next succeeding, he must submit an acceptable thesis upon some theme previously approved by the Faculty of the School of Engineering. The candidate, if successful, will be notified and must present himself at commencement to receive the degree.

GENERAL INFORMATION

Applicable to Schools of Instruction for Men

EXPENSES

TUITION, BOARD, ROOM, AND FEES

Tuition is free to students whose families reside* in the State of Delaware. The tuition for all other students is $50 per term or $100 per session.

	First Term	*Second Term*	*Full Year*
Matriculation fee (at entrance only)	$5.00	.....	$5.00
Rooms (in Harter Hall) lowest	22.50	22.50	45.00
Board at University Commons (rate $6.25 per week)	109.00	110.00	219.00
Library, Gymnasium, and general University Fee	20.00	20.00	40.00
Athletic Fee	7.50	7.50	15.00
Infirmary‡	.....	.....	.....
Contingent deposit for breakage, Library fines, or loss of Military equipment	10.00	.....	10.00
Total (exclusive of Laboratory and Shop fees)			$334.00
For non-residents add $100			$434.00

‡The Infirmary with trained nurse constantly in attendance is maintained at the expense of the University, but students while confined there are required to pay a nominal fee of One Dollar ($1.00) for each day or fraction thereof.

*No person shall be considered eligible to register in the University as a resident of the State of Delaware unless he has resided in the State for the twelve months next preceding the date of proposed enrollment; and no person shall be considered to have gained residence in the State while a student of the institution, unless or until his parents move into the State and acquire bona fide residence there.

Laboratory and Shop Fees

Laboratory and Shop fees vary according to the course taken. The fees for laboratory or shop work in each of the courses named below are as follows:

Agronomy 1	$2.50	Elec. Engineering 42	7.00
Agronomy 2	2.50	Elec. Engineering 43	10.00
Agronomy 4	2.50	Elec. Engineering 44	10.00
Agronomy 5	5.00	Elec. Engineering 45	5.00
Agronomy 7	2.50	Elec. Engineering 46	5.00
Agronomy 9	2.50	Horticulture 16	2.50
Animal Husbandry, 23	2.50	Horticulture 17	2.50
Bacteriology 1	5.00	Horticulture 18	2.50
Bacteriology 2	5.00	Horticulture 20	2.00
Bacteriology 3	5.00	Horticulture 23	2.50
Biology 1	2.50	Horticulture 29	2.00
Biology 2	2.50	Mech. Engineering 41	10.00
Biology 7	2.50	Mech. Engineering 42	10.00
Biology 8	2.50	Mech. Engineering 43	5.00
Chemistry 13	7.50	Mech. Engineering 44	5.00
Chemistry 14	7.50	Mech. Engineering 51	5.00
Chemistry 15	15.00	Mech. Engineering 52	5.00
Chemistry 16	15.00	Mech. Engineering 53	7.50
Chemistry 23	15.00	Mech. Engineering 54	7.50
Chemistry 24	15.00	Mech. Engineering 56	8.00
Chemistry 26	15.00	Mech. Engineering 56	8.00
Chemistry 35	15.00	Mech. Engineering 57	5.00
Chemistry 36	15.00	Mech. Engineering 58	5.00
Chemistry 44	7.50	Physics 3	5.00
Chemistry 47	30.00	Physics 4	5.00
Chemistry 50 (Thesis)	5.00	Physics 7	5.00
Civil Engineering 29	5.00	Physics 8	5.00
Civil Engineering 20	5.00	Plant Pathology 2	2.50
Elec. Engineering 11	7.00	Soil Bacteriology 2	5.00
Elec. Engineering 41	7.00		

PROGRAM OF ENGINEERING FEES

The courses to be taken in the several divisions of the School of Engineering are prescribed, without election, in each year. For the convenience of engineering students the following schedules are given showing cost in each year of the required laboratory and shop work:

Chemical Engineering

	First Term	Second Term	Total
Freshman Year			
Chemistry 15 & 16.....	$15.00	$15.00	$30.00
Sophomore Year			
Chemistry 23 & 24.....	15.00	15.00	30.00
Junior Year			
Chemistry 35 & 36.....	15.00	15.00	30.00
Electrical Lab	7.00	7.00	14.00
	$22.00	$22.00	$44.00
Senior Year			
Chemistry 47 & 50.....	30.00	15.00	45.00

Civil Engineering

	First Term	Second Term	Total
Freshman Year			
Shop	$7.50	$7.50	$15.00
Chemistry	7.50	7.50	15.00
	$15.00	$15.00	$30.00
Sophomore Year			
Physics	5.00	5.00	10.00
Junior Year			
Electrical Eng'r Lab.....	7.00	.....	7.00
Senior Year			
Highway Laboratory	5.00	5.00	10.00

Electrical Engineering

	First Term	Second Term	Total
Freshman Year			
Shop	$5.00	$5.00	$10.00
Chemistry	7.50	7.50	15.00
	$12.50	$12.50	$25.00

Sophomore Year			
Shop	7.50	7.50	15.00
Physics	5.00	5.00	10.00
	$12.50	$12.50	$25.00
Junior Year			
Electrical Laboratory	7.00	7.00	14.00
Shop	8.00	8.00	16.00
	$15.00	$15.00	$30.00
Senior Year			
Electrical Laboratory	10.00	10.00	20.00
Mechanical Laboratory	5.00	5.00	10.00
	$15.00	$15.00	$30.00

Mechanical Engineering

	First Term	*Second Term*	*Total*
Freshman Year			
Chemistry	$7.50	$7.50	$15.00
Shop	5.00	5.00	10.00
	$12.50	$12.50	$25.00
Sophomore Year			
Physics	5.00	5.00	10.00
Shop	7.50	7.50	15.00
	$12.50	$12.50	$25.00
Junior Year			
Electrical Lab.	7.00	7.00	14.00
Shop	8.00	8.00	16.00
	$15.00	$15.00	$30.00

Senior Year			
Electrical Lab.	5.00	5.00	10.00
Mechanical Lab.	10.00	10.00	20.00
	$15.00	$15.00	$30.00

General Regulations

The following regulations governing the payment of fees, rents, charges, and deposits have been adopted by the Trustees of the University of Delaware, subject to change at their discretion.

Registration

Students are required to register on the days set apart for that purpose.

Days for Registration, 1921-1922

(1) For first term:
Thursday, September 22, 1921—Freshmen and Sophomores.
Friday, September 23, 1921—Juniors and Seniors.

(2) For second term:
Monday, January 27, to Saturday, February 4—All students.

Any student who fails to comply with this requirement shall be required to pay a fine of $5 for the first day and $1 for each succeeding day until his registration is completed; and if his registration is not completed within five days after the opening day of the term, he shall not be permitted to register.

The term "register," as here used, means that a student shall have his schedule approved by the Dean of the School in which he wishes to enroll, shall pay all

his bills at the office of the Business Administrator, and shall have his card approved at the Registrar's office. Before applicants for admission to the Freshman class may register, it is necessary for them to secure cards of admission from the chairman of the Committee on Admission.

Payment of Fees and Charges

(1) Matriculation, Tuition, and Fees: A matriculation fee of $5 shall be paid by every new student entering the University. This fee is collected but once. All fees for tuition (tuition is free to students from the State of Delaware), incidental expenses, and laboratory charges are due and payable on the days set for registration.

(2) Dormitory Rents and Charges: A preliminary payment of $10 is required of a student when he reserves a room. The remainder of the rent for the year is payable, in two equal installments, on the days set for registration in both terms. The preliminary payment of $10 shall be forfeited to the University if the student or applicant for admission fails to complete his registration within five days after the opening day of the session.

(3) Board: All resident students, except those who live at home, are required to board in the dining-halls of the University. The cost of board, with dining-hall service, is $6.25 per week.

Payments for board are due and payable as follows: $55.00 on the days set for registration for the first term; $54.00 on November 1; $55.00 at the time set for registration for the second term; and $55.00 on March 15. Students who fail to pay mid-term board bills on November 1 and March 15, respectively, shall pay a fine of $5 for the first day and $1 for each succeeding day; and if they fail to pay within five days

after the bills become due, they shall be dropped from the University.

No refund will be made unless the student is obliged to be away from the University on account of sickness for a period of not less than two weeks and presents a physician's certificate stating that he was too ill during his absence to attend to his collegiate work.

(4) Contingent Fee: Every student shall deposit with the Business Administrator, at the beginning of the session, as a contingent fee the sum of $10 to cover any breakage, damage, loss, or other charges against him. At the end of the year any part of the $10 not so used will be returned to the student.

(5) Beginning with 1922, a Diploma Fee of $10 will be charged to each person who receives a degree in course.

Withdrawals

A student who withdraws from the University may, provided he gives written notice to the Dean at the time of his withdrawal, secure an allowance granted in the following special cases:

(1) If he withdraws within one week of the date on which he registered, he will receive a return of the full amount of the fees paid; but in no case will the matriculation fee be returned.

(2) If he withdraws during the term on account of illness or other physical disability, he will be entitled to a return of an amount which shall be such proportionate part of his entire fees as the number of weeks in which he is not in attendance bears to the number of weeks in the term for which the fees were collected.

Honorable Dismissal and Graduation

No student shall be granted a certificate of honorable dismissal or be graduated who has not satisfied in full all his financial obligations to the University.

DORMITORIES FOR MEN

Rooms may be obtained in Harter Hall. The rooms are of three classes: single, double, and en suite. The University provides for each student a bed, chiffonier, study table, and two chairs. Other furnishings, including bed clothes and linen, are provided by the student. All rooms are heated by steam and lighted by electricity.

Applications for rooms for 1921-1922 should be made to the Business Administrator. It is recommended that rooms be engaged not later than the month of June. The rentals of the rooms for the collegiate year are as follows:

Single room	$75.00 to $85.00	each	student
Double room	45.00 to 47.50	"	"
Suite for two, with separate room for study	90.00 to 100.00	"	"
Suite for three.....	70.00	"	"

A payment of $10 on account must be made by each student when he reserves a room. This payment shall be forfeited to the University if the student fails to complete his registration within five days after the opening day of the session.

Rules for Occupants of Dormitory Rooms

(1) All students who rent rooms in the Dormitory shall keep them throughout the session unless they are given permission by the Business Administrator to change.

(2) All students who take rooms must occupy them and pay rent and charges for their share thereof until the end of the year, unless released sooner by the Business Administrator.

(3) Students shall not make additions or alterations to the rooms or appurtenances.

(4) Students shall not decorate rooms in such a manner that it is impossible to clean them satisfactorily.

(5) Students shall not drive nails into any walls, doors, or windows.

(6) Damage done to a Dormitory room or to its windows or doors will be charged to the occupant.

(7) A student shall be held responsible for any disorder occurring in his room, whether committed by himself or by others; and if his room is reported more than once for disorder, he will not be permitted to retain it.

(8) No student is permitted to invite or receive on the campus or in any of the buildings, tradesmen, dealers, or other person or persons not acceptable to the University authorities.

(9) Playing upon musical instruments (including graphophones) in the Dormitory after nine o'clock p. m. is forbidden.

(10) No student may make changes in the electric wiring.

(11) When students are permitted to have additional lights in their rooms, there will be an extra charge of $4 per year for each lamp.

(12) All extension lights shall be equipped with

heavy reinforced cord. This cord may not be attached directly to the woodwork or walls.

(13) All bed linen shall be kept clean and shall be changed regularly.

(14) Tampering with the fire hose is absolutely prohibited.

(15) Students shall not play baseball or other games on the grounds adjacent to the Dormitory, Wolf Hall, or in Old College enclosure.

Registration. Application for admission to college should be made to the Dean of the University before August 1, 1921. Candidates for admission to the Freshman class are advised to submit their applications and credentials at the time of the Entrance Examinations in June or during the summer preceding the college year in which they wish to enter. Freshmen and Sophomores must register on Thursday, September 22; Juniors and Seniors, on Friday, September 23.

Examinations. Examinations in all subjects are held at the close of each term and are conducted either in writing, or orally, as the nature of the subject may require or as the professor may prefer. Review examinations are also held at other times whenever, in the judgment of the professor, the objects of instruction may be promoted by such means. The examinations are designed not as a mere test of the student's knowledge, but as a valuable training in rapid, concise, and accurate expression. They serve as a valuable means of giving the student a ready command of his mental powers, and, by encouraging a review of a period of work, they give him a broader view and a firmer hold of the several subjects of study.

The Honor System was adopted by the student body in 1916.

In determining a student's fitness to proceed to a higher class, great weight is given to the character of his performance of recitation room duties. The results of the term examinations are combined with the recitation records; but in fixing the student's standing the quality of his recitation work is the weightier factor.

No student will be promoted unless he has completed three-fourths of the work of his class of the year just passed and has no condition in previous years unsatisfied.

Re-examinations. Students who fail in an examination in any subject are required to pay a fee of one dollar for a re-examination. In order to be admitted to a re-examination students must present to the examiner a certificate properly signed showing that the fee has been paid.

Reports. At the close of each term a report of the student's general combined recitation and examination record will be sent to his parents or guardian. These reports show the course of study the student is pursuing and the class in which he is enrolled. Parents are urged to give these reports close attention, and, when the reports indicate any lack of attention to duty, to co-operate with the Faculty in correcting habits of idleness and indifference.

Elective Studies. Students in the School of Arts and Science must submit to the Dean, on or before May 15 of each academic year, schedules showing elective courses for the following year.

Advisers. An adviser for each ten members of the Freshman Class is appointed by the President at the beginning of each academic year. The advisers for the other classes are appointed by the President at the close of each academic year from a list of men chosen by the respective classes.

Attendance. Regular attendance is required at all college exercises. Suitable rules governing absences have been adopted and any student not observing them will be dropped from the college. Punctual return to the college after vacation or at the beginning of a term is insisted upon. All absences immediately preceding or following a vacation are counted double.

All work missed by reason of necessary absences must be made up to the satisfaction of the professor concerned; otherwise the student will be marked zero for each exercise missed. The privilege of making up work will not be granted after an unexcused absence.

Religious Instruction. The college is in no sense sectarian, but every student is expected to attend public worship at least once each Sunday at such place as parent or guardian may select.

Infirmary. To aid in caring for the health of the students, the college has established an Infirmary. In the building are four rooms for ordinary cases, two rooms for contagious diseases, and an office for first aid. The work of the infirmary is in charge of Miss Rosalie Pié, a trained nurse.

Students' Self-Aid. A committee of members of the Faculty helps to secure employment for students who depend on their own resources. All students wishing to avail themselves of opportunities thus offered are required to register with the chairman of the committee, Professor G. E. Hancock.

Prizes and Scholarships

The Bishop Coleman Memorial Prize

The Bishop Coleman Memorial Prize of twenty-five dollars is offered annually to the member of the graduating class having in all respects the best standing in the Senior year.

The Alumni Prize

A silver cup is offered by the Alumni Association to be competed for in an Annual Debate between teams representing the Freshman and Sophomore classes. This cup will become the property of the class which wins two debates.

Lieutenant Clarke Churchman Memorial Prize

The Delaware Daughters of the American Revolution and friends of Lieutenant Clarke Churchman have established a "Lieutenant Clarke Churchman Memorial Fund," the income from which is to be used for the encouragement of military virtues and instruction by the annual presentation of a premium to the student who shall attain the highest proficiency in the military department. The prize derived from this fund amounts annually to twenty-five or thirty dollars.

The Philo Sherman Bennett Prize

The Hon. William Jennings Bryan, in carrying out the will of Philo Sherman Bennett, Esq., late of New Haven, Connecticut, has designated the University of Delaware as one of the twenty-five colleges or universities to receive its share of an endowment of ten thousand dollars to be invested and the proceeds to be applied to the payment of an annual prize "for the best essay discussing the principles of free government." The University of Delaware has accordingly received four hundred dollars in trust for this purpose, and from the income derived from this sum an annual prize will be awarded to the undergraduate student who presents the best essay in the fields prescribed. The income from this fund yields an annual prize of twenty to twenty-five dollars.

The William D. Clark Prize for Mathematics

The late Miss Julia Newton Clark, in memory of her father, William D. Clark, offered a prize of twenty-

five dollars to be awarded at the end of the Sophomore year to the student who had shown the greatest proficiency in Mathematics during his Freshman and Sophomore years. Since her death this prize has been given by Miss Emma Clark.

The State Grange Prizes

For the purpose of encouraging a high standard of work in the Agricultural courses, the Delaware State Grange has offered three cash prizes of fifteen dollars, ten dollars, and five dollars in gold to be awarded respectively to the three students pursuing the course in Agriculture who have manifested the greatest interest, and made the greatest progress in their work during the year for which the prizes are awarded.

Old Home Prize (*William H. Purnell Memorial*)

This prize was established by persons interested in the life, history, and biography of the Delmarvia peninsula, and made a memorial to President Purnell. The annual income from a fund of $500 is available for this prize, to be awarded for the best essay on some phase of the history of Delaware or the "Eastern Shore." It is open to all students. Successful essays will be read by title on Commencement Day and will be bound and filed in the College Library. Essays of sufficient merit may be published. Rules for the guidance of contestants will be posted.

Alumni Prize for Advancement in Engineering

A prize of $25 is offered annually by Julius H. G. Wolf, Class of 1893, to the student in Engineering who shows the greatest progress in his work during the Junior and Senior years.

Scholarship of the Harvard, Princeton, and Yale Clubs of Delaware

A scholarship amounting to $100 annually was founded in 1914 by the Harvard, Princeton, and Yale

Clubs of Delaware. It will be awarded to a deserving Delaware boy. The appointment is made for one year only, but the incumbent for any one year may be reappointed.

Scholarship of the Princeton Club of Delaware

A scholarship amounting to $100 annually was founded in 1919 by the Princeton Club of Delaware. It will be awarded to a deserving Delaware boy.

The Robert Bayne Wheeler Scholarship

Mrs. Robert Bayne Wheeler has given to the college $2500, the income from which, amounting to about $125, is to be given annually to a deserving Delaware boy to whom this amount will be of service in helping him to obtain an education.

Du Pont Scholarship

For the purpose of encouraging young men to specialize in chemistry, the E. I. du Pont de Nemours and Company offers a scholarship of $300 to a Senior student in chemistry.

The Scholarship of the Sons of Delaware of Philadelphia

A scholarship of $300 was founded in 1919 by the Sons of Delaware of Philadelphia. It will be awarded annually to a Delaware boy. The incumbent for any one year may be reappointed.

The Tatum Memorial Lecture Fund

Mr. Ashton R. Tatum, a friend of the College, at his death left a fund of $1000, the income from which is to be devoted to lectures on the treatment and care of horses.

Libraries

The College Library is conveniently located in a separate building facing Old College Hall. Its collection includes books of history, biography, economics, philosophy, education and literature, as well as many valuable reference books. This general library is arranged on open shelves to which the students have free access. The Library is open every weekday from 8 A. M. to 9 P. M.

In addition to the collection of books, more than 130 of the leading literary and scientific periodicals are to be found in the reading room. The Library receives eight daily papers from Wilmington, Baltimore, Washington, Philadelphia, New York, and Boston, as well as many state papers. The College Library is one of the officially designated depositories of the United States Government, and from this source receives valuable documents.

Various alumni and friends of the College have added to the resources of the Library from time to time by gifts of books and magazines. Such gifts are greatly appreciated. They have made possible additions to the Library not provided for in the regular budget and have enriched and strengthened the collections of books in special fields.

In addition to the main College Library special reference and technical libraries are maintained in many of the departments under the supervision of the professor in charge. The combined libraries of the College contain about 28,000 volumes.

Athletics

Football, baseball, basketball, track athletics, and tennis are recognized as collegiate sports.

The general supervision of all athletic sports is vested in an athletic council composed of two members

of the Faculty, two members of the Alumni Association, and three undergraduates, chosen from the three upper classes.

All eligibility rules originate with the Faculty.

Any student who is admitted to college later than the second Monday of a term is not eligible during that term to represent the college in outside athletic contests.

No student is permitted to represent the college on any athletic team or as manager of such, who is not in good standing in his class and doing, at the time, satisfactory work in his studies.

No student pursuing a course other than one leading to a degree will be permitted to represent the college in any athletic contest during his first year in residence, unless he shall have satisfied the entrance requirements of a course leading to a degree.

BUILDINGS AND GROUNDS

GYMNASIUM

A spacious gymnasium containing apparatus for gymnastic exercises, a running track, shower baths, and a swimming pool, affords ample accommodations for indoor athletic sports, such as basketball, indoor-running, swimming contests, wrestling, and boxing.

ATHLETIC FIELD

In Frazer Field, the college possesses one of the best athletic fields in the country. This field, completely equipped, was donated to the college by Mr. and Mrs. Eben B. Frazer, of Newark, and Mr. Stanley Frazer, '04, of New York city, as a memorial to a son and brother, Joseph Heckart Frazer, '03. The field contains a baseball diamond, football gridiron, tennis courts, and a quarter-mile cinder track with a 220-yard straightaway. It is enclosed with a hollow tile stucco wall and has a beautiful terrace along one side.

State Bacteriological and Pathological Laboratory

By Act of the Delaware Legislature, a State Bacteriological and Pathological Laboratory has been established at the college. The Laboratory is under the management of the State Board of Health. Its location makes accessible the resources of the college in the way of libraries and apparatus.

Organizations

The Agricultural Club. The Agricultural Club is composed of the agricultural students and some members of the Faculty. It is under the management of the students, who elect their officers each term. Meetings are held weekly and subjects relating to both class work and actual farm practice are discussed. Lecturers of repute address the club on agricultural subjects. The object of the club is to create enthusiasm and to promote the interests of agriculture among the students as well as to accustom the members to talk on agricultural subjects before an audience.

American Association of Engineers. Delaware College was granted a chapter in the American Association of Engineers in February, 1920. Affiliation with a national engineering society brought the old local engineering society out of a dormant state into an active and influential college organization. The chapter is composed of engineering students and some members of the engineering faculty. It is entirely under the management of the student officers. Meetings of the chapters are held regularly on the first and third Thursday nights of each month. At these meetings discussions are held on local interests of the engineering students. The objects of the American Association of Engineers are to raise the standards of ethics of the engineering profession and to promote the eco-

nomic and social welfare of the engineer. In addition to upholding the objects of the national association, the local chapter aims to provide a means by which the student may be brought into closer touch with the profession for which he is preparing himself.

Athletic Council. The Athletic Council is in direct charge of all athletic activities not constituting a part of the college curriculum. It is composed of two representatives from the Faculty, two representatives from the Alumni, and three representatives from the Students, representing respectively the Senior, Junior, and Sophomore classes.

Chess Club. The Delaware College Chess Club maintains a team for intercollegiate matches and within its own membership conducts a number of tournaments through the college year.

Varsity Club. The Varsity Club is an organization composed of students who have earned their Varsity D. The purpose of the club is to create and maintain a better feeling among the letter men and to offer in its membership an additional reward to the mere earning of the letter.

Derelicts. The Derelicts is an honorary senior fraternity, the purpose of which is to create a spirit of goodfellowship throughout the Senior Class and the Student Body. The members of the Junior Class who are elected as members are informed of their election on the day of the Annual Inter-scholastic Track and Field Meet on Joe Frazer Field.

Wolf Chemical Club. The Wolf Chemical Club is an organization composed of undergraduate chemistry students of the college. The purpose of the club is to interest the students in the science of chemistry and to furnish a medium through which they may come into closer contact with members of the Faculty and outside professional men.

Faculty Club. A Faculty Club was organized in 1918 for the purpose of promoting social intercourse among the members of the Faculty.

Footlights Club. The purpose of this organization is to present serious plays, comedies, and farces, in Newark or out of town as conditions may determine. No previous experience in dramatic work is required for admission to membership. Any student in Delaware College is eligible to apply for active membership, and any alumnus or member of the faculty may apply for honorary membership.

Fraternities. Three national Greek letter fraternities have local chapters at the college: Kappa Alpha (Southern), Sigma Nu, and Sigma Phi Epsilon. Two organizations, Omega Alpha and Gamma Delta Rho, are local. Three of these fraternities own their houses. The average resident membership is about twenty.

Phi Kappa Phi. A Chapter of the Phi Kappa Phi, an honorary fraternity devoted to the interests of Scholarship, was established at the college in 1905.

Publications

The regular publications of the college consist of the Delaware College Review, the Bulletin, and the Experiment Station Bulletin.

The Review. The Review is a weekly publication devoted to the general interest of the students. The subscription price is $2.00 a year.

The **Bulletin** is issued quarterly. One of the four numbers is the Catalogue number.

The **Experiment Station Bulletin** is issued quarterly by the Experiment Station. One of the numbers is the Annual Report.

These bulletins will be sent to any address.

Students' Loan Fund. A Loan Fund to help needy students was established by the Alumni Association in 1915. The object of the Committee, which was appointed by the President of the Association, is to raise a substantial sum of money which will be placed in trust and the income of which will be used to help deserving students. Definite amounts will be loaned to students on promissory notes which the student is expected to meet as soon as he is financially able.

Alumni Organizations and Activities

The Alumni Association of Delaware College is the central organization for the general body of Alumni. Membership is limited to graduates, and to former students who may be elected by the Association.

The Annual Business Meeting is held on the Saturday preceding Commencement Day each year. In the evening various reunions and celebrations are held. A mid-winter dinner is held every year at the College on the Saturday nearest to Washington's Birthday.

Ways and Means Committee for 1920-1921: Carl Harrington, '95, Chairman; George N. Davis, '98; E. H. Shallcross, '04; Egmont Horn, '10; L. B. Steele, '17; and the officers of the Association ex-officio.

The officers of the General Alumni Association for 1920-1921 are: President, Everett C. Johnson, '99; Vice-President, Richard S. Rodney, '04; Secretary and Treasurer, George E. Dutton, '04.

Graduates in various parts of the country have organized branch alumni associations. Up to the present time, five active branches have been formed: The Western Pennsylvania Section, Pittsburgh, Pa.; the New England Society, Boston, Mass.; the New York Chapter, New York City; the Philadelphia Society, Philadelphia, Pa., and the Lower Delaware Society.

Degrees Conferred at the Annual Commencement of Delaware College

JUNE 14, 1920

Civil Engineer

William Compton Wills	New York, N. Y.

Bachelor of Arts (Arts and Science Course)

William Ellison Barnard	Camden
Francis Bayard Carter	Newark
George Allen Hudson	Lewes
Charles Leland Weigle	Wilmington

Bachelor of Science (Arts and Science Course)

Alexander Blair	Wilmington
Harold Caulk Grier	Milford
Arthur Garrett Heinel	New Castle
Herman McKay	Wilmington
Draper Smith	Wilmington
William Stewart, Jr.	Wilmington

Bachelor of Science In Agriculture

George Steele Cullen	Elkview, Pennsylvania
George Amos Ely	Winterthur
Harvey Lewis Fell	Wilmington
Joseph Irwin Jefferis	Stanton
Frank Paul McCardell	Wilmington
Frank Robinson Pool, Jr.	McDonough
Charles Rodney Tunnell	Georgetown
Thomas Moore Whiteman	Delaware City

Bachelor of Science In Mechanical Engineering

George Clarence Brower	Federalsburg, Maryland
Robert Adrian Colpitts	Mt. Pleasant
Harry Walter Loose	Wilmington
Leonard Kittinger Moore Taylor	West Chester
Norman Thomas	Canterbury
Leon Yacobyan	Wilmington

Bachelor of Science In Civil Engineering

Charlesworth Carswell	Wilmington
George Henry Hudson, Jr.	Wilmington
Winfield Wilson Lattomus	Townsend

Bachelor of Science In Electrical Engineering

John White Anderson, 3d	Wilmington
William Francis Lindell	Newark
James Herman Little	Newark
Stanley Drake Loomis	Meshoppen, Pennsylv'a
George Merle Nelson	Delmar
Julio Russo	Wilmington
Merville Charles Shaw	Wilmington

Bachelor of Science In Chemical Engineering

Paul Taylor Arbuckle, Jr.	Newark
Eugene Harlan Kennedy	Newark
Ralph Pickering Kennedy	Marshallton
Michael Walter Plam	Brooklyn, New York
Hasson Taylor Terrell	Elkton, Maryland

Prizes, Scholarships, and Honors Announced at the Commencement of 1920 of Delaware College

The Bishop Coleman Memorial Prize: Charlesworth Carswell.

The Alumni Prize: First, Robert Betty, Jr.; second, Norman Wade; third, Gordon Lee Ernest Linn.

The Lieutenant Clarke Churchman Memorial Prize: Harry Walter Loose.

The Bennett Prize: Alexander Blair.

The William D. Clark Prize for Mathematics: David Robinson Allmond.

The State Grange Prizes: First, John Arnold Bar-

nard, Jr.; second, Frank Else; third, Harry Herman Jones.

The Old Home Prize: William Templin Broughall.

The Scholarship of the Harvard, Princeton, and Yale Clubs of Delaware for 1920-21 was awarded to Thomas Muncy Keith.

The Princeton Scholarship for 1920-21 was awarded to William Franklin Pierce Jacobs, Jr.

The Robert Bayne Wheeler Scholarship for 1920-21 was awarded to Willard Robinson Triggs.

Two du Pont Scholarships in Chemistry were awarded to James Draper Craig and John Fletcher Price.

The Sons of Delaware Scholarship for 1920-21 was awarded to Charles Norman Wade.

The following members of the Class of 1920 were elected to the Honorary Fraternity of Phi Kappa Phi:

John White Anderson, 3d
William Ellison Barnard
Alexander Blair, Jr.
George Clarence Brower
Charlesworth Carswell
Francis Bayard Carter
Eugene Harlan Kennedy
Herman McKay
Julio Russo
Charles Leland Weigle

Students in Attendance at Delaware College During the Collegiate Year 1920-1921

Abbreviations: A. & S., Arts and Science; A., Agriculture; C. E., Civil Engineering; M. E., Mechanical Engineering; E. E., Electrical Engineering; Ch. E., Chemical Engineering; E., Engineering not specified.

SENIOR CLASS

Aikens, George Holton	A. & S.	Wilmington
Alexander, Howard Berton	A.	Oil City, Pa.
Anderson, William Thomas	E. E.	Henry Clay
Attix, Charles Thomas	A. & S.	Kenton
Barnard, John Arnold, Jr.	A.	Wyoming
Boggs, Irving Hook	C. E.	Dover
Boulden, Marion Packard	C. E.	Elkton, Md.
Broughall, William Templin	A. & S.	Wilmington
Brown, Harvey Newton	A. & S.	Newark
Cooch, Francis Allyn, Jr.	A.	Newark
Craig, James Draper	Ch. E.	New Castle
Denney, Courtland Forrest	Ch. E.	Wilmington
Dole, Thomas Hyde	Ch. E.	Wilmington
Donoho, William C. Dorsey	A. & S.	Seaford
Elzey, Welton Franklin	A.	Seaford
Evans, Clarence William	A. & S.	Newark
Fairbanks, Joseph Harrison	A. & S.	Wilmington
Foulk, William Henry	A. & S.	Wilmington
Frederick, William Heisler	C. E.	Marshallton
Gass, Charles Wardon	E. E.	Marshallton
Gordy, Leon Hackett	M. E.	Wilmington
Handy, Roland Cookman	A.	Federalsburg, Md.
Hastings, Vaughan Archelaus	A. & S.	Delmar
Hemphill, William Albert	C. E.	Delaware City
Holland, Thomas Wilmer	Ch. E.	Smyrna
Horty, James Albert	C. E.	Wilmington
Johnson, Allen Jaquith	M. E.	Middletown
Jones, Harry Herman	A.	Woodside
Kohlerman, James Harold	Ch. E.	Wilmington
Levandis, John Alexander	A. & S.	Wilmington
Lindsay, Walter David	E. E.	Providence, Md.
Lynch, Charles Stewart	A. & S.	Wilmington
Madden, George Harney	A. & S.	New Castle
Marconetti, Arrigo Eugene	A. & S.	Brooklyn, N. Y.
Marvel, Phillip Henry	E. E.	Houston
McCaughan, Hugh, Jr.	Ch. E.	Wilmington

McMullen, Joshua Willard	A. & S.	Lincoln Univ., Pa.
McMullen, Richard Hutchinson	E. E.	Wilmington
McWhorter, John Francis, Jr.	Ch. E.	Middletown
Monaghan, Paul Kane	A. & S.	Wilmington
Mulrooney, Thomas William	Ch. E.	Wilmington
Olcott, John Woodward	A.	Washington, D. C.
O'Neill, John Francis	Ch. E.	Wilmington
Perchick, Samuel Leon	A.	Philadelphia, Pa.
Phillips, Claude Ellis	A.	Delmar
Preston, Ira Lucas	C. E.	Trenton, N. J.
Price, George Cleaver	M. E.	Newark
Price, John Fletcher	Ch. E.	Carneys Point, N. J.
Sipple, George Massey	C. E.	Milford
Smyth, William John	C. E.	Wilmington
Spaid, Arthur Farquhar	A. & S.	Dover
Steele, Ira Kenneth	M. E.	Newark
Taggart, Rudolph York	C. E.	Elkton, Md.
Tonkin, Enoch George	C. E.	Wilmington
Truss, James Petheram	A. & S.	Wilmington
Waples, George Franklin	A. & S.	Milton
Wilson, Joseph Samuel	A.	Georgetown
Wise, Joseph Coley	E. E.	Smyrna
Wood, Melvin Frederick	C. E.	Delaware City

JUNIOR CLASS

Allen, Alvan	Ch. E.	Wilmington
Allmond, David Robinson, Jr.	C. E.	Wilmington
Ayerst, Albert Douglas	E. E.	Elkton, Md.
Baumgardt, William Christian	A. & S.	Richardson Park
Bugless, Edgar	E. E.	Wilmington
Carll, Robert Heath	A. & S.	Camden, N. J.
Carter, George Gray	Ch. E.	Newark
Carter, Maynard Harper	Ch. E.	Claymont
Challenger, Barclay Roberts	M. E.	Claymont
Christfield, John Gilbert	M. E.	Wilmington
Daly, Leonard Barrett	A.	Philadelphia, Pa.
Dantz, Theodore Roosevelt	A. & S.	Lincoln Univ., Pa.
Dare, Charles Rulon	Ch. E.	Jamesburg, N. J.
DeLuca, John James	A. & S.	Wilmington
Deppe, Florian Rudolph, Jr.	M. E.	Philadelphia, Pa.
Draper, Milton Lowber	M. E.	Wyoming
Fletcher, Robert Paulson, Jr.	E. E.	Wilmington
Foulk, Robert North	A. & S.	Wilmington
Geoghegan, Henry Barwick	Ch. E.	Elkton, Md.
Goffigon, Oliver Winfield	M. E.	Marionville, Va.
Gutowitz, Abraham	A. & S.	Lewes
Hallett, William Emerson	E. E.	Milford
Harmer, William Frederick	A. &S.	Newark

Harper, Joseph Howard	A.	Still Pond, Md.
Holton, Walter Dean	A. & S.	Newark
Hopkins, Melvin	A. & S.	Dover
Hurff, Leland	A.	Elmer, N. J.
Ivory, Harry Standerman	Ch. E.	Camden, N. J.
Jacobs, William F. P., Jr.	E. E.	Smyrna
Kalmy, George Garabed	A.	Boston, Mass.
Keith, Thomas Muncy	A. & S.	Dover
Lilly, William Stavely, 3d	A. & S.	Newark
Magee, Arley Benjamin, Jr.	A. & S.	Dover
Maroney, Samuel Patterson	Ch. E.	Wilmington
McDonnell, Thomas Joseph	C. E.	Wilmington
Mowlds, William Lyle	A.	Bellevue
Reed, Albert Chrisman	M. E.	Washington, D. C.
Repp, Harold Colbert	M. E.	Philadelphia, Pa.
Roemer, Louis Edward	Ch. E.	Wilmington
Rothrock, Joseph John	A. & S.	New Castle
Sackett, Benjamin Richardson	Ch. E.	Philadelphia, Pa.
Smith, Gerald Camille	M. E.	Wilmington
Smith, Walter Dent	E. E.	Wilmington
Stewart, Robert	A. & S.	Wilmington
Triggs, Willard Robinson	M. E.	Wilmington
Twoes, Stanley French	Ch. E.	Camden, N. J.
Wills, Franklin Knight	C. E.	Wilmington
Wilson, John Edwin, Jr.	A. & S.	Smyrna
Wood, Joseph Chandler	A. & S.	Wilmington
Woodrow, Charles Whitney	Ch. E.	Wilmington
Wagner, Walter John	A. & S.	Philadelphia, Pa.
Young, Howard Pollock	M. E.	Wilmington
Zimmerman, Harry Franklin	Ch. E.	Wilmington

SOPHOMORE CLASS

Barnard, Edward Reynolds	M. E.	Wilmington
Baxter, James Morton	A. & S.	Wilmington
Betty, Clifford Alexander	E. E.	Wilmington
Betty, Robert, Jr.	E. E.	Montchanin
Bland, William Ellsworth	E.	Newark
Booth, Verne Hobson	Ch. E.	Sawyer, N. D.
Boyce, Willard Davis	A. & S.	Cheswold
Brandt, Earl DeWitt	Ch. E.	Camden, N. J.
Brown, John Wilmot	A. & S.	Wilmington
Bunten, William Henry	M. E.	Philadelphia, Pa.
Burnite, Alvin Warrington	M. E.	Wilmington
Carr, Albert Edwin	A.	Wilmington
Carter, Herbert Hilder	E. E.	Edge Moor
Challenger, John Franklin	E. E.	Claymont
Cole, Harry Richardson	A. & S.	Dover
Collins, Theodore	A. & S.	Milford

Cook, Herman Wallace	A.	Newark
Cooper, Ezekiel, Jr.	A. & S.	New Castle
Cooper, William Paul	A. & S.	Newark
Crawford, Howard Favorite, Jr.	M. E.	Wilmington
Crothers, Wesley Gifford	A. & S.	North East, Md.
Cummings, Courtney Hampton	A. & S.	Newark
Devitt, Daniel Edwin	A.	Georgetown
Dixon, Eric Stanton	A. & S.	Salem, N. J.
Dorsey, Harold Burns	A. & S.	Wilmington
Draper, Henry Carlton	A. & S.	Milton
Eaton, Richard Bozman	C. E.	Parksley, Va.
Elliott, James Grayson	A. & S.	Delmar
Ewing, William Moffitt	M. E.	West Grove, Pa.
Fletcher, Northrop Rogers	M. E.	Wilmington
Fockler, Edwin Benjamin	A. & S.	North East, Md.
France, John Butz	C. E.	Wilmington
Gallo, Anthony James	A. & S.	Wilmington
Gilbert, Walter Mairs	A.	Spring City, Pa.
Gray, Herbert Wendell	A. & S.	Wilmington
Grier, William Humes	A. & S.	Milford
Gundlack, Alfred	A. & S.	Philadelphia, Pa.
Hahn, James William	A.	Philadelphia, Pa.
Haines, Harlan Fisher	A. & S.	Seaford
Hawke, LeRoy Francis	E. E.	Wilmington
Hoey, Edwin Anderson	M. E.	Dover
Howard, Charles Wooster	A. & S.	Salisbury, Md.
Hughes, Jesse Edward	Ch. E.	Bridgeport, N. J.
Humphreys, Albert Orgain	A.	Wilmington
Linn, Gordon Lee Ernest	E.	Wilmington
Long, Hix, Jr.	A. & S.	Denton, Md.
Lund, Harold Mayne	A. & S.	Landenburg, Pa.
Lynch, John Mitchell	A.	Lewes
Magaw, Everett Lewis	C. E.	Marshallton
McGovern, John Joseph	C. E.	Wilmington
McManus, George Bright	A.	Wilmington
Middleton, Leonard	A. & S.	Wilmington
Murphy, Jay Edward	A. & S.	Milford
Murray, John Joseph, Jr.	C. E.	Wilmington
Murray, Roger	A. & S.	Wilmington
Nutter, Charles Armel	A. & S.	Milford
Owens, Charles Lester	A. & S.	Bridgeville
Patton, Joseph Leslie	E. E.	Wilmington
Peirce, Edgar Herbert	A.	Embreeville, Pa.
Pitman, Edwin Price	C. E.	Delanco, N. J.
Price, Clifford Banks	E. E.	Harrington
Pyle, Theodore Howell	A. & S.	Wilmington
Reynolds, Charles Willard	M. E.	North East, Md.
Robbins, James Ponder, Jr.	A. & S.	Wilmington
Robinson, Granville Stott	A. & S.	Newark

Robinson, Walter Donoho	A. & S.	Seaford
Rose, Edgar Newman	A. & S.	Newark
Rowan, Frederick Johnson	A. & S.	Newark
Schimel, Abraham	E. E.	Wilmington
Stewart, Eugene Lyman	A. & S.	New Rochelle, N. Y.
Strickler, Frank Downing	A. & S.	Wilmington
Swezey, William Francis	E. E.	Wilmington
Tebo, George Dwight	A. & S.	Dover
Thielman, Joseph Anthony	E. E.	New Castle
Tilghman, James Edwin	A. & S.	Cape Charles, Va.
Underwood, Clarence Joseph	E. E.	Wilmington
Viohl, Herbert Kurt Wetherell	M. E.	Wilmington
Wade, Charles Norman	A. & S.	Wilmington
Webb, John Loud	E. E.	Wyoming
Wells, John Murphy	M. E.	Wilmington
Wells, Joseph	C. E.	Wilmington
Williams, John Davidson	E. E.	Newark
Wintrup, Joseph Paul	A. & S.	Wilmington
Wise, Carl Thomas	A. & S.	Wilmington
Woodward, James Dilworth	A.	Wilmington
Yost, Howard Beidleman	M. E.	Wilmington

FRESHMAN CLASS

Aikin, Merwyn Appleton	A. & S.	Joplin, Mo.
Alexander, Granville Percival	A. & S.	Wilmington
Anderson, William	Ch. E.	Harrington
Armstrong, Paul Arunah	M. E.	Newark
Armstrong, Thomas Pilling	A. & S.	Newark
Ash, Earl Spruance	A. & S.	Richardson Park
Ash, George Reynolds	A. & S.	Elkton, Md.
Barker, Henry Shurtleff, Jr.	A.	Lansdowne, Pa.
Baynum, Robert Ellegood	A. & S.	Milford
Betzmer, Henry Joseph	C. E.	Philadelphia, Pa.
Blest, Charles Paul	E. E.	Newark
Breuninger, George Biddle	A. & S.	Philadelphia, Pa.
Burdge, John Milton, Jr.	E. E.	Camden, N. J.
Chipman, James Manners	Ch. E.	Georgetown
Clift, Harold William	E. E.	Wilmington
Corkran, Howard Leroy	A. & S.	Wilmington
Crew, Leonard Shaw	E. E.	Wilmington
Daniels, Harold Leroy	M. E.	Penns Grove, N. J.
Deputy, James Hudson	M. E.	Milford
Donalson, James Harmer	A. & S.	Wilmington
Downing, Clarence Burwick	M. E.	Milford
Elliott, Isaac Stidham	A. & S.	Wilmington
Ellis, Elmer Truitt	E. E.	Seaford
Etter, Charles	E. E.	Woodbury, N. J.
Everett, Charles	A. & S.	Wilmington

Fader, John Raymond	E.	Newark
Foster, William Richard	C. E.	Trenton, N. J.
Fouracre, Arthur Claude	C. E.	Middletown
Fox, James Fulton	M. E.	Wilmington
Frear, Jacob Allen, Jr.	A.	Wyoming
Gedling, Edwin Lambdin	A. & S.	Richardson Park
Ginn, Urie Wilson	E. E.	McDonough
Gradwohl, Franz Kolck	E.	Wilmington
Grier, Albert Oliver H., Jr.	M. E.	Wilmington
Groves, John Andrew	A. & S.	Wilmington
Grubb, Paul Hickman	A. & S.	Wilmington
Harwitz, Morris	A. & S.	Wilmington
Herman, George Robert	A.	Newtown Sq., Pa.
Hoffecker, John Savin	A. & S.	Newark
Houghland, Geoffrey	A.	Brooklyn, N. Y.
Housman, John Frederick	A. & S.	Milford
Howard, William Edwards, Jr.	A. & S.	Salisbury, Md.
Humes, James Edward	E. E.	Milford
Hurst, William Price	A. & S.	Newark
Jackson, Edward Henry	E. E.	Principio Fur'e, Md.
Johnson, Haywood Edward	C. E.	Philadelphia, Pa.
Johnson, Marriott Conard	Ch. E.	Lansdowne, Pa.
Joyce, John Joseph	M. E.	Wilmington
Kirk, Herbert Piper	C. E.	Wilmington
Leamy, Frank Ashton	C. E.	Philadelphia, Pa.
Levine, Harry	A. & S.	Philadelphia, Pa.
Mackie, Frank Harmon, Jr.	A. & S.	Wilmington
Malone, Henry Ward	A. & S.	Wilmington
McClure, Howard Richard	E.	Wilmington
MacDonald, Harvey Forsythe	A. & S.	Dover
McDowell, Edwin Spencer	A.	Middletown
McKirachan, Gerald	E. E.	Kennett Square, Pa.
McWhorter, Purnal Lynch	Ch. E.	Middletown
Mendenhall, William Kenneth	Ch. E.	Hockessin
Middleton, Newell Melbourne	C. E.	Camden, N. J.
Mortimer, John Edwin	Ch. E.	Wilmington
Mote, Joseph Harold	E. E.	Strickersville, Pa.
Murray, Charles Winston	A. & S.	Wilmington
Nunn, Horace Alfred	A.	Milford
Owens, Paul Dempster	E. E.	Perryville, Md.
Pierce, Robert Bell	A. & S.	Milford
Potter, Elbert Leland, Jr.	Ch. E.	Omaha, Neb.
Price, Raymond Roberts	C. E.	Sudlersville, Md.
Ramsey, Richard Earl	A. & S.	Newark
Records, Edward Thomas	A. & S.	Middletown
Rew, John Richard	E.	Parksley, Va.
Robinhold, George Adam	E. E.	Philadelphia, Pa.
Roemer, Francis Hill	E. E.	Wilmington
Rose, Turpin Price	M. E.	Delaware City

Schaefer, John Henry	Ch. E.	Wilmington
Seery, Paul Richard	E.	Wilmington
Shapiro, Jacob	A. & S.	Wilmington
Shockley, Wilbur Saulsbury	A. & S.	Millsboro
Siegrist, Ralph Smith	E. E.	Wilmington
Smith, Clifford Asbury	Ch. E.	Wilmington
Smith, Eugene Morris	E. E.	Elsmere
Smith, Frederic Benson	Ch. E.	Wilmington
Smyth, James Elbert	A.	Wilmington
Spaid, Charles Dalmy	A. & S.	Dover
Steel, Paul Pié	A. & S.	Newark
Swain, David Morgan	A. & S.	Clinton, Conn.
Taylor, Theodore	M. E.	Wilmington
Tempone, Vincent	C. E.	Philadelphia, Pa.
Terrill, Milton Willard	Ch. E.	Wilmington
Townsend, Paul Lockwood	A. & S.	Selbyville
Tripolitis, John Cosmas	E. E.	
Valliant, William Enos	A. & S.	Laurel
Vansant, Franklin Taylor	M. E.	Wilmington
Walker, George Leon	A.& S.	Wilmington
Walker, Robert	Ch. E.	Hockessin
Walsh, William	E.	Wilmington
Warner, Francis Reybold	M. E.	Delaware City
Watson, Harold Hannibal	A. & S.	Dover
Willis, George Eisler	E.	Wilmington
Winters, Ralph Nicholas	E. E.	Camden, N. J.
Zollet, Samuel	A. & S.	Philadelphia, Pa.

SPECIAL STUDENTS

Ayars, Preston	A.	Wilmington
Short, Wingate Daniel	A. & S.	Wilmington

VOCATIONAL STUDENTS

Else, Frank	A.	Philadelphia, Pa.

SUMMARY

College Year 1920-1921

	Arts & Science	*Agriculture*	*Engineering*	*Total*
Senior	18	10	31	59
Junior	17	5	31	53
Sophomore	40	10	36	86
Freshman	37	7	57	101
Special	1	1		2
Vocational		1		1
	113	34	155	302

GENERAL SUMMARY

MEN:		
Arts, Engineering, Agriculture	302	
WOMEN:		
Arts, Education, Home Economics	179	
		481
MEN AND WOMEN:		
Academic Extension		145
Summer School for Teachers, 1920	167	
Rehabilitation Department, ex-Service Men	160	
		327
Total number of persons under instruction provided and directed by the University		953

Agricultural Extension Work

Boys' and Girls' Club Members	1221
Attendance at Institutes, etc.	5275
Total	6496

DIVISION OF REHABILITATION

FACULTY

Charles Andrew McCue, S. B.	*Dean of Agriculture*
Raymond Melville Upton, S. B.	*Director of Rehabilitation*
Charles Raymond Runk, S. B.	*Agronomy*
Allan C. Williams, S. B.	*Animal Husbandry*
Albert L. Schaffle, S. B.	*Poultry*
Bousson Davison, S. B.	*Horticulture*
Phineas Morris, Ph. B.	*Academic Department*
Herman G. Dimmick, A. B.	*Academic Department*
Mary L. Powers	*Academic Department*
Winifred S. Bach, A. B.	*Secretary*
Ellen Crow	*Stenographer*

CALENDAR

The school year is divided into three terms. The first and second terms are the same as those of the University. The calendar of the Summer Term follows:

June 14	Wednes.	Term begins, 1.00 P. M.
August 8	Tuesday	Vacation begins.
August 23	Monday	Vacation ends, 1.00 P. M.
September 21	Tuesday	Term ends.

ORGANIZATION

The Rehabilitation Division for agricultural vocational training of disabled ex-service men is attached to and under the control of the School of Agriculture but is not academically of full college grade.

This Division was established by the University as the result of a request from the Federal Board for Vocational Education for assistance in training dis-

abled soldiers and sailors. Many former soldiers and sailors of the World War were incapacitated by gunshot wounds, shell shock, gas, amputations, and functional disorders. In many cases these disabilities were such as would prevent the men from following out their previous trades or occupations. The United States Government is endeavoring to fit these men for occupation where their disability will not be a serious handicap and will thus permit them to make a competent livelihood.

In April, 1920, the University was asked to assist in the work of rehabilitation by throwing open its doors to ex-service men for training in Agriculture. A plan was worked out whereby agricultural training could be given Rehabilitation students. This plan was approved by the University Trustees and the Rehabilitation Division of the School of Agriculture was opened May 3, 1920. Owing to the fact that the University offers no two-year course in Agriculture, and that a large proportion of the men received for training had had but limited educational advantages, it was found necessary to establish separate courses with a special corps of instructors.

PURPOSE OF THE REHABILITATION DIVISION

Each student is offered an opportunity to pursue a two-year course in Vocational Agriculture. The two-year course is similar to that offered by other Agricultural Colleges; but it has been so arranged as to be extremely flexible. New students are constantly coming in and the system of courses offered is flexible enough to accommodate the changing personnel. The course of training given prepares men to start farming for themselves or others. Special emphasis is placed upon training men for the particular type of work for which they may be adapted.

FACILITIES

The Rehabilitation Division uses the buildings, farm and class rooms of the University, the schedule of work being so arranged that the regular University routine is not disturbed. In so far as possible the laboratory and farm equipment of the University is placed at the disposal of the Rehabilitation students.

REQUIREMENTS FOR ADMISSION

The only men admitted are those who have been admitted to training by the Federal Board for Vocational Education and are certified by them to the University of Delaware.

COURSES OF STUDY

A Men who are able to meet the University entrance requirements may enter the Freshman class in Agriculture. Others who have had sufficient preparation are allowed to take such courses as may be approved by the Dean of Agriculture. Every encouragement is given men to meet gradually University entrance requirements and enter the regular four-year course in Agriculture leading to a degree.

B Two Year Course: The two year course of study is designed to meet the requirement of the majority of men enrolled. This course leads to a certificate in one of the four major agricultural courses, namely: Agronomy, Animal Husbandry, Poultry and Horticulture. Students of sufficient preparation may gradually transfer from this course into the regular University four year course in Agriculture.

Subjects of Instruction

AGRONOMY

The Rehabilitation Agronomy is especially adapted to be taught to students who have had no previous instruction in chemistry. The principles of chemistry which are the basis of soils work are taught during the course. In the crop courses sufficient elementary botany in given to enable the instructor to make clear explanation.

Agr 1 Field Crop Production: Two hours discussion and two hours field study.
C. R. RUNK *Three credit hours*

Agr 2 and 3 Elementary Soil Fertility. Two hours of classroom discussion and two hours of field practice, continuous throughout two terms. More outside preparation is required in the last term.
C. R. RUNK *Agr 2 Three credit hours*
Agr 3 Four credit hours

Agr 4 Soil Fertility and Management. (Prerequisite: Agr. 2 and 3.) Two hours class discussion and three hours field work.
C. R. RUNK *Four credit hours*

Agr 5 Farm Machinery. Two hours of class discussion and two hours of practice field work throughout term.
C. R. RUNK *Three credit hours*

Agr 6 Farm Power. (Prerequisite: Agr 5.) Two hours of class study and two hours of field practice in operation.
C. R. RUNK *Three credit hours*

Agr 7 Farm Management. Two hours class discussion and two hours field practice. A course for advanced students.
C. R. RUNK *Three credit hours*

Agr 8 Seminar. Field trips covering the particular phase of work will be required.
C. R. RUNK *Three credit hours*

Agr 9 Farm Practice.
C. R. RUNK *Three credit hours*

ANIMAL HUSBANDRY

University stock and equipment are used for instruction material.

AH 1 Elementary Animal Husbandry. Two lessons and one two-hour farm practice period.
ALLAN C. WILLIAMS *Three credit hours*

AH 2 Feeding and Management. (To be preceded or accompanied by AH 1.) Two lessons and one two-hour farm practice period.
ALLAN C. WILLIAMS *Three credit hours*

AH 3 Types and Breeds of Livestock. (To be preceded or accompanied by AH 1.) Two class hours and one two-hour farm practice period.
ALLAN C. WILLIAMS *Three credit hours*

AH 4 Feeding and Management. A continuation and completion of AH 2. Two lessons and one two-hour farm practice period.
ALLAN C. WILLIAMS *Three credit hours*

AH 5 Types and Breeds. A course similar to AH 3, dealing with beef cattle, dairy cattle, and sheep. Two lessons and one two-hour farm practice period.
ALLAN C. WILLIAMS *Three credit hours*

AH 6 Dairying. (Prerequisite AH 1.) Actual work in a dairy laboratory. Two lessons, one three-hour practice period.
ALLAN C. WILLIAMS *Four credit hours*

AH 7 Livestock Management. (Prerequisite: AH 1.) Two lessons and one two-hour practice period.
ALLAN C. WILLIAMS *Three credit hours*

AH 8 Seminar. One two-hour period for discussions and outside work under supervision.
ALLAN C. WILLIAMS *One credit hour*

AH 9 Farm Practice.
ALLAN C. WILLIAMS *Three credit hours*

HORTICULTURE

The excellent orchards of the farm are available for instruction in these courses, and also land for small gardens; the college greenhouses are used for plant propagation.

Hort 1 Elementary Horticulture. One two-hour farm practice and two lessons.
BOUSSON DAVISON *Three credit hours*

Hort 2 Commercial Pomology. (Prerequisite: Hort 1.) Two lessons and one two-hour farm practice period.
BOUSSON DAVISON *Three credit hours*

Hort 3 Picking and Marketing Fruits. (To be preceded or accompanied by Hort 1.) Two lessons and one two-hour farm practice period.
BOUSSON DAVISON *Three credit hours*

Hort 4 Vegetable Gardening. Two lessons and one two-hour farm practice.
BOUSSON DAVISON *Three credit hours*

Hort 5 Plant Growth. Two lessons and one two-hour farm practice.
BOUSSON DAVISON *Three credit hours*

Hort 6 Pruning, Plant Propagation, and Spraying. (Prerequisite: Hort 1.)
BOUSSON DAVISON *Three credit hours*

Hort 7 Commercial Vegetable Gardening. (Prerequisites: Hort 1; Hort 4 is suggested where possible.) Two lessons and one two-hour farm practice.
BOUSSON DAVISON *Three credit hours*

Hort 8 Orchard Care and Management. (To be preceded or accompanied by Hort 8.) Two lessons and one two-hour farm practice period.
BOUSSON DAVISON *Three credit hours*

Hort 9 Farm Practice.
BOUSSON DAVISON *Three credit hours*

POULTRY

The rehabilitation department is building a poultry plant designed to accommodate finally 1000 hens. The students are doing all the work, both in the building and care of the plant.

Poultry 1 Elementary Poultry Keeping. Two lessons and one two-hour farm practice.
ALBERT E. SCHAFFLE *Three credit hours*

Poultry 2 Poultry House Construction and Design. (To be preceded or accompanied by Poultry 1.) Two lessons and one practice period of two hours in poultry plant.
ALBERT E. SCHAFFLE *Three credit hours*

Poultry 3 Marketing. (To be preceded or accompanied by Poultry 1.) Two lessons and one practice period of two hours on poultry plant.
ALBERT E. SCHAFFLE *Three credit hours*

Poultry 4 (a) Incubation. (To be preceded or accompanied by Poultry 1.)
ALBERT E. SCHAFFLE *One credit hour*

Poultry 4 (b) Brooding. (To be preceded or accompanied by Poultry 1.) Practice: three short periods a day, including Sunday for four weeks during brooding season, one half-hour morning, noon and night, in poultry plant.
ALBERT E. SCHAFFLE *One credit hour*

Poultry 4 (b) Brooding. (To be preceded or accompanied by Poultry 1.) Practice: three short periods a day, including Sunday, for four weeks during brooding season, one half-hour morning, noon and night, in poultry plant.

ALBERT E. SCHAFFLE — *One credit hour*

Poultry 5 Flock Management. (To be preceded or accompanied by Poultry 1.) Practice: three short periods a day, including Sunday, for four weeks during brooding season, one half-hour morning, noon and night in poultry plant.

ALBERT E. SCHAFFLE — *One credit hour*

Poultry 6 Poultry Judging. (To be preceded or accompanied by Poultry 1.) Two lessons and one two-hour practice period.

ALBERT E. SCHAFFLE — *Three credit hours*

Poultry 7 Poultry Diseases. (To be preceded or accompanied by Poultry 1.) Three lessons.

ALBERT E. SCHAFFLE — *Three credit hours*

Poultry 8 Poultry Farm Management. (To be preceded or accompanied by Poultry 1 to 7, inclusive.) Two lessons and one practice period of two hours.

ALBERT E. SCHAFFLE — *Three credit hours*

Poultry 9 Seminar. Must be preceded or accompanied by Poultry 1 to 8, inclusive. Recitations and conferences or round table discussions on current topics and special problems arising in poultry husbandry. One lesson.

ALBERT E. SCHAFFLE — *One credit hour*

Poultry 10 Seminar.

ALBERT E. SCHEFFLE — *One to three credit hours*

Poultry 11 Seminar.

ALBERT E. SCHAFFLE — *Two to four credit hours*

Poultry 12 Farm Practice.

ALBERT E. SCHAFFLE — *Three credit hours*

EXPENSES OF THE DIVISION

Tuition, books, and supplies are furnished at the expense of the United States Government.

	Per Week
Board in the University Dining Hall	$6.25
Room	$2.00 to $3.00

It is desired that students subscribe to the University paper, and join the Rehabilitation Club.

The University rules governing the Dormitory and general conduct apply to Rehabilitation men, as do the rules for absence and grades. A special dormitory, called Linden Hall, is provided, and will care for forty men. Lodging is found for others in hotels and private residences.

ORGANIZATIONS

A poultry association has been formed of all men who are electing poultry as a major subject. Friends of the students may join by special invitation.

Rehabilitation students are welcome to join the Agricultural Club of the University.

Rehabilitation students have organized a Rehabilitation Club, which takes care of such activities as athletics, social times, and good fellowship in the student body.

The Rehabilitation Student Council is organized on a basis similar to that of the Student Council of the University of Delaware, and is the official representative of the student body on important questions concerning the welfare of the Division, and aids in maintaining the honor system as outlined by the University.

Two columns of the University student paper have been made available for Rehabilitation men under the same conditions as regular students. A special Rehabilitation editor has charge of the Rehabilitation Department.

STUDENTS REGISTERED IN THE REHABILITATION DEPARTMENT SINCE MAY 3, 1920

*Alexander, James	Philadelphia, Pa.
Allen, William P.	Moosic, Pa.
*Ambearle, William	Allentown, Pa.
Arris, Paul R.	Oil City, Pa.
*Artman, Alvin C.	Narberth, Pa.
Bachman, Charles	Sugar Load, Pa.
*Beaman, Louis A.	Philadelphia, Pa.
Brennan, James J.	Philadelphia, Pa.
Brindle, James	Philadelphia, Pa.
*Brown, Dewey L.	York, Pa.
Calafire, Paul	Easton, Pa.
Campbell, John J.	Bloomsburg, Pa.
Cassidy, Bernard D.	Philadelphia, Pa.
Carnes, Cicero H.	Paris, Mich.
*Chamberlain, George	Montrose, Pa.
Cherry, Truman	Albion, Pa.
Christian, Arthur A.	Wilkes-Barre, Pa.
*Clark, Miles J.	Minooka, Pa.
*Clark, James A.	Philadelphia, Pa.
Clark, Richard C.	Philadelphia, Pa.
*Cameron, Daniel	York, Pa.
*Comasac, Mike	Nesquehoning, Pa.
*Comis, Candido	Pittsburgh, Pa.
*Connell, Daniel	
*Conners, Leo A.	Wilkes-Barre, Pa.
Cooperman, Nathan	Wilmington, Del.
Cotton, Morton A.	Philadelphia, Pa.
Crowther, William B.	Philadelphia, Pa.
Curtis, Ciserow D.	Berlin, Md.
Dahlestrom, Carl	Johnstown, Pa.
*Davies, William J.	Sugar Notch, Pa.
Dietterich, Ellwood C.	Northampton, Pa.
*Dombrowski, Stanley B.	Erie, Pa.
Egleston, John E.	Great Bend, Pa.
Ehinger, William J.	Philadelphia, Pa.
†Else, Frank	Philadelphia, Pa.
Ent, Lambert	Philadelphia, Pa.
Evans, John B.	Blakely, Pa.
Fee, Frank	Philadelphia, Pa.
*Feichter, Walter	Philadelphia, Pa.
Finkbone, Daniel P.	Reading, Pa.
Fitzgerald, William V.	White Haven, Pa.
Friedman, Philip	Philadelphia, Pa.
*Friend, Thomas	Philadelphia, Pa.

Fox, Raymond A.	White Haven, Pa.
Freas, Leon D.	Norwood, Pa.
*Gabler, Albert	Philadelphia, Pa.
*Galbraith, Samuel	Birmingham, Pa.
§Gardner, Walter	Gwynedd Valley, Pa.
*Gettinger, Edward	Greensburg, Pa.
Gorrie, Joseph	Philadelphia, Pa.
Gorski, William J.	Bolivar, Pa.
*Greensmith, William F.	Philadelphia, Pa.
Griffith, Sanford R.	Pen Argyl, Pa.
†Hahn, James W.	Trappe, Pa.
Harkins, L. J.	Philadelphia, Pa.
Harley, Allen G.	Philadelphia, Pa.
*Harris, Benjamin F.	Philadelphia, Pa.
Harris, Norman	Philadelphia, Pa.
Harris, Samuel	Philadelphia, Pa.
Harvey, William M.	Philadelphia, Pa.
Helmbreck, Earl J.	Saegertown, Pa.
*Higham, Frank	Lake Ariel, Pa.
Hippensteel, Robert W.	Carlisle, Pa.
*Hiscock, Elwood	Wilkes-Barre, Pa.
Hoesch, Albert	State College, Pa.
Huff, William S.	Confluence, Pa.
*Hudson, John J.	Philadelphia, Pa.
Humphreys, Handel	Edwardville, Pa.
Interthal, Fred J.	Millville, Pa.
Jay, Nelson E.	Norristown, Pa.
*Jeblonski, Joseph	Philadelphia, Pa.
*Johns, John M.	Plymouth, Pa.
Johnson, Charles W.	Oil City, Pa.
*Johnson, George F.	Pen Argyl, Pa.
*Kelly, Joseph	Wilmington, Del.
*Kelly, William	Clifton Heights, Pa.
Kilner, Aaron	Hazleton, Pa.
King, James	Philadelphia, Pa.
*Kivlin, Edward T.	Philadelphia, Pa.
Kleckner, Harry E.	Tamaqua, Pa.
*Klinedinst, Ira	Hanover, Pa.
Konegen, John L.	Marcus Hook, Pa.
Lake, George W.	Philadelphia, Pa.
Laucks, Sterling	Red Lion, Pa.
LaVine, Max	Wilkes-Barre, Pa.
LeDuc, Edmond	Pittsburgh, Pa.
*Lepp, Edwin C.	Easton, Pa.
*Leyrer, Frank	Pittsburgh, Pa.
*Lohr, John M.	Indiana, Pa.
*Loomis, Stanley D.	Meshoppen, Pa.
Losse, Elmer D.	Cheltenham, Pa.
Louden, Raymond	Philadelphia, Pa.

*Love, William A.	Philadelphia, Pa.
Lueckert, Louis H.	McKeesport, Pa.
*Lynch, John T.	Philadelphia, Pa.
Lyons, Victor S.	Manor, Pa.
*McAllister, Patrick G.	Philadelphia, Pa.
McArthur, Charles V.	Clarksburgh, W. Va.
McBride, James A.	Philadelphia, Pa.
*McElroy, George L.	Philadelphia, Pa.
*McConachie, Andrew	Philadelphia, Pa.
*McKernan, Sylvester	Philadelphia, Pa.
McLeod, John	Wilmington, Del.
*Maher, Matthew J.	Philadelphia, Pa.
Maloumby, John	Philadelphia, Pa.
*Mannifield, Albert	Tacony, Pa.
*Marinos, John C.	Philadelphia, Pa.
Marks, Charles L.	Philadelphia, Pa.
*Marshall, William	Philadelphia, Pa.
Melson, Paul W.	Bridgeville, Del.
Mevla, Anthony W.	Claymont, Del.
Michael, George E.	Dalmatia, Pa.
Mills, Edward C.	Philadelphia, Pa.
Minnick, Clarence H.	Allentown, Pa.
Minor, Oscar	Hallton, Pa.
*Mitchell, Thomas R.	Philadelphia, Pa.
Mitchell, Joseph	Inkerman, Pa.
Mitnik, Jacob	Philadelphia, Pa.
Moon, Albert F.	Confluence, Pa.
Morkus, Anthony	Philadelphia, Pa.
Mumford, Carroll W.	Emporium, Pa.
*Muth, Raymond	Allentown, Pa.
Nertney, Michael F.	Philadelphia, Pa.
*Notturno, Gracinto	Pittsburgh, Pa.
Ovens, Edmund A.	Ashley, Pa.
Parise, Joseph	Philadelphia, Pa.
Peters, William C.	Philadelphia, Pa.
Pierce, Romaine H.	Philadelphia, Pa.
Pierson, August A.	Pittsburgh, Pa.
*Powers, Frank	Harrisburg, Pa.
Redline, John C.	Wing Cap, Pa.
*Remley, William	Bloomsburg, Pa.
Robinson, Samuel	Philadelphia, Pa.
Rockenbach, James M.	Philadelphia, Pa.
Rubinstein, Jacob	Philadelphia, Pa.
Scheid, Robert H.	Lancaster, Pa.
Shouse, Richard E.	Pittsburgh, Pa.
Sabot, Paul	Plymouth, Pa.
*Sloman, Alfred J.	Leroy, N. Y.
Shuman, Howard O.	Bloomsburg, Pa.
Smalley, Frederick G.	Dunbar, Pa.

*Smith, Bernard J.	Reading, Pa.
Snook, Frederick A.	Marsh Wood, Pa.
*Sorvello, Salvatore	Philadelphia, Pa.
Spisak, Mike J.	Plymouth, Pa.
Swope, John W.	Jonestown, Pa.
Swope, Oliver F.	Hanover, Pa.
*Taylor, Frank	Philadelphia, Pa.
Tatum, Granville H.	Bridgeton, N. J.
Thompson, Wesley E.	Philadelphia, Pa.
*Tomillo, John	Scranton, Pa.
Tully, John	Wayne, Pa.
Ware, Grover C.	Dry Ridge, Ky.
Wenzel, Monroe	Erie, Pa.
Wrought, Thomas	Harmersville, Pa.
Wysocki, Alexander	Philadelphia, Pa.
*Yanoosky, Edward	Sheffield, Pa.
Yutze, Chris	Scranton, Pa.
Zyska, Joseph	Philadelphia, Pa.

Total enrollment since May 3	160
The number who have been transferred by the Federal Board	58
Present enrollment	102

*Students who have been transferred from the school by the Federal Board.

†Regular University students.

‡Students who have graduated from the regular University course.

§Deceased.

The Women's College

ACADEMIC COUNCIL

WALTER HULLIHEN, PH. D. . . . . *President*
M. A., University of Virginia, 1896; Ph. D., Johns Hopkins University, 1900; Professor of Classics, University of Chattanooga, 1904-1909; Professor of Greek, University of the South, 1909-1920; Dean, College of Arts and Science, University of the South, 1912-1920; President, University of Delaware, 1920——.

WINIFRED JOSEPHINE ROBINSON, PH. D. . . . . *Dean*
B. S., University of Michigan, 1899; B. Pd., University of Michigan, 1899; M. Pd., Michigan Normal College, 1912; M. A., Columbia, 1904; Ph. D., Columbia, 1912; Critic Teacher, Michigan Normal College, 1893-1895; Assistant in Biology, 1900-1905, Instructor in Botany, 1905-1907 and 1909-1910, Professor of Botany, 1910-1913, Vassar College; Dean of Women, University of Wisconsin, Summer Session, 1913-1914; Dean of the Women's College of Delaware, 1914——.

GEORGE ABRAM HARTER, PH. D. . . . . *Mathematics*
B. A., St. John's College, 1878; Ph. D., St. John's College, 1893; Tutor in Latin and Mathematics, St. John's College, 1878-1880; Professor of Mathematics, Delaware College, 1885-1888; Professor of Mathematics and Physics, Delaware College, 1888——; President of Delaware College, 1896-1914.

ELISHA CONOVER, M. A. .....*Ancient Languages and Literatures*

A. B., Dickinson College, 1884; M. A., Dickinson College, 1887; Professor of Latin, Wilmington Conference Academy, 1888-1891; Professor of Latin and Greek, Montpelier Seminary, Vermont, 1891-1895; Professor of Ancient Languages and Literatures, Delaware College, 1895——.

EDWARD LAURENCE SMITH, M. A...*Modern Languages and Literatures*

A. B., Delaware College, 1896; M. A., Delaware College, 1899; Instructor in German, French, and Spanish, Brooklyn Polytechnic Institute, 1901-1902; Instructor in Modern Languages, Delaware College, 1902-1904; Professor of Modern Languages and Literatures, Delaware College, 1914——; Dean of Delaware College, 1915——; Secretary of the Faculty of Delaware College, 1916——.

WILBUR OWEN SYPHERD, PH. D.....*English*

A. B., Delaware College, 1896; B. S., University of Pennsylvania, 1900; M. A., Harvard, 1901; Ph. D., Harvard, 1906; Instructor in English, University of Wisconsin, 1901-1903; Professor of English, Delaware College, 1906——.

EARNEST VANCOURT VAUGHN, PH. D.....*History and Political Science*

B. L., University of Missouri, 1900; M. A., University of Missouri, 1904; Ph. D., University of Pennsylvania, 1910; Instructor in History, University of Missouri, 1906-1911; Professor of History and Political Science (State of Delaware Chair of History), Delaware College, 1911——.

MARY ELIZABETH RICH, B. S.....*Field Secretary of Department of Education*

B. S. in Education, Columbia University, 1914; Assistant Principal, Whittier, Hampton Institute, 1904-1905; Instructor in Winona Normal School, 1905-1906; Instructor in Oshkosh Normal School, 1906-1909; Critic Teacher, School of Education, University of Chicago, 1909-1913; Professor of Education, The Women's College of Delaware, 1914-1920.

CHARLES CONGER PALMER, S. M., D. V. M..*Bacteriology*

D. V. M., Ohio State University, 1912; S. M., University of

Minnesota, 1915; Instructor in Physiology and Veterinary Science, and Assistant Veterinarian, Minnesota Experiment Station, 1913-1915; Assistant Professor of Physiology and Assistant Veterinarian, Minnesota Experiment Station, 1915-1917; Professor of Bacteriology, Physiology, and Hygiene, and Veterinarian to Experiment Station, Delaware College, 1917——.

WILLIAM ALBERT WILKINSON, M. A.....*Education*
Graduate Warrensburg State Normal School, 1907; B. S., University of Missouri, 1910; A. M., University of Missouri, 1911; Assistant in Education, University of Missouri, 1910-1911; Instructor in Education, University of Missouri, Summer Session, 1916; Head of Department of Education, Mayville State Normal School, 1911-1917; Professor of Education, Delaware College, 1918——.

GEORGE ELLIOTT DUTTON, M. A.....*English*
A. B., Delaware College, 1904; M. A., Harvard University, 1911; Instructor of English, University of Missouri, 1908-1910; Instructor in English, Delaware College, 1911-1913; Assistant Professor of English, Delaware College, 1913-1917; Associate Professor of English, Delaware College, 1917-1918; Professor of English, Delaware College, 1918——.

QUAESITA CROMWELL DRAKE, M. A.....*Chemistry*
B. A., Vassar College, 1910; M. A., 1911; Assistant in Chemistry, Vassar College, 1911-1913, Instructor, 1913-1914; Fellow in Chemistry, University of Chicago, 1915-1916 and Research Assistant, 1916-1917; Instructor in Chemistry, 1917-1918, and Professor of Chemistry, The Women's College of Delaware, 1918——.

LAURA VEACH CLARK, A. B.....*Home Economics*
A. B., Western Maryland College, 1905; Drexel Institute Diploma, 1914; Instructor in Home Economics, Drexel Institute, Philadelphia, 1914-1918; Extension Work, Newark, N. J., under co-operative direction New Jersey State Agricultural College and U. S. Department of Agriculture, 1918-1919; Instructor of Home Economics, 1919-1920; Professor of Home Economics, 1920-1921.

FINLEY MELVILLE KENDALL FOSTER, PH. D....*English*
B. A., New York University, 1913; M. A., New York University, 1914; Ph. D., Columbia University, February, 1918; Assistant in English, New York University, 1913-1914; Instructor in English, New York University, 1914-1916; President's University Scholar, Columbia University, 1916-1917; Instructor in

English, Delaware College, 1917-1918; Assistant Professor of English, Delaware College, 1918-1920, Associate Professor of English, 1921——.

JOHN MARVIN LE CATO, M. A.....*Bacteriology*

A. B., University of Michigan, 1913; M. A., University of Illinois, 1916; Head of Department of Biology, Marshall College, 1914-1918; Specialist in Plant Diseases, U. S. Department of Agriculture, 1918; Associate Professor of Plant Pathology, 1919-1920, and Associate Professor of Botany and Bacteriology, 1920-1921, Delaware College.

WILLIAM LLOYD BEVAN, PH. D.....*History*

M. A., Columbia University, 1889; Ph. D., University of Munich, 1893; Fellow School Political Science, Columbia University, 1889; Professor of History, University of the South, 1898-1903; Associate Editor New York Churchman, 1906-1910 and 1913-1918; Professor of History, Kenyon College, 1918-1920; Associate Professor of History, University of Delaware, 1920——.

REINHOLD EUGEN SALESKI, M. A...*Modern Languages*

B. A., Harvard University, 1911; M. A., Harvard University, 1917; Assistant Professor of Modern Languages, Delaware College, 1917——.

GEORGE E. BRINTON, PH. B.....*Modern Languages*

Ph. B., Franklin and Marshall, 1913; Modern Languages, Whitesville (N. Y.) High School, 1913-1915; Instructor in Modern Languages, Mackenzie School, 1915-1916; Assistant Professor of Modern Languages, Delaware College, 1919——.

RAYMOND W. KIRKBRIDE, B. S.....*Modern Languages*

B. S., Westminster College (Pa.), 1913; Chautauqua Promotion Work, 1913-1917; Instructor Spiers School, 1917-1918; Assistant Professor of Modern Languages, Delaware College, 1919——.

CARL JOHN REES, A. B.....*Mathematics and Physics*

A. B., Franklin and Marshall College, 1918; Teacher of Mathematics and Science, Lancaster High School, 1917-1920; Assistant Professor of Mathematics and Physics, The Women's College of Delaware, 1920——.

MAMIE E. ROHR, M. A.....*Education*

B. S., Columbia University, 1917 (three years' undergraduate B. S., Columbia University, 1917; M. A., Columbia University, 1918: Teacher of English and Geography in upper elementary grades, Lynchburg, Virigina, 1905-1910; Supervisor in upper

elementary grades, State Normal School, Farmville, Virginia, 1910-1915; Assistant Teacher in Horace Mann School, 1915-1819; Grammar Grade Supervisor and Instructor in Education, North Carolina College for Women, Greensboro, North Carolina, 1918-1919; Instructor in Education, The Women's College of Delaware, 1919-1920; Assistant Professor, 1920——.

MARION ETHEL WATSON.....*Physical Education*

Graduate of the Department of Hygiene, Wellesley College, 1914; Supervisor of Physical Training in Public Schools, Yonkers, New York, 1914-1915; Director of Physical Education, St. Mary's Episcopal School, Concord, New Hampshire, 1915-1918; Director of Physical Education, The Women's College of Delaware, 1918——.

ORLISTA LILLIAN DIKEMAN, B. S.....*Home Economics*

B. S., Teachers College, Columbia University, 1917; Instructor in Domestic Arts, Drexel Institute, Philadelphia, Pennsylvania, 1916-1918; Instructor in Home Economics, The Women's College of Delaware, 1918——.

DOROTHY WOLFF, B. A.....*Biology*

B. A. Smith College, 1918; Cumberland Valley State Normal School, Shippensburg, Pa., 1913; Teacher, Highspire High School and Grammar School, 1914-1915; Assistant in Comparative Anatomy and Embryology, Mount Holyoke College, 1918-1919; Instructor in Biology, The Women's College of Delaware, 1919——.

DORA WILCOX .....*Music*

Mansfield State Normal Conservatory, 1912; Cornell University Music Department, 1914; Supervisor of Music in Public Schools of Lewistown, Pa., 1914-1915; Tyrone, Pa., 1916-1917; Coatesville, 1918; Instructor in Music, The Women's College of Delaware, 1919——.

MIRIAM ELLEN NULL, B. A.....*Home Economics*

B. A., University of Illinois, 1919; Assistant in Home Economics, Summer Session, University of Illinois, 1919; Instructor in Home Economics, The Women's College of Delaware, 1919——.

RACHEL W. TAYLOR.....*Fine and Industrial Arts*

Graduate of State Normal School, Trenton, N. J., 1908; graduate of School of Fine and Applied Arts, Pratt Institute, Brooklyn,

N. Y., 1912; Teacher, Asbury Park, N. J., 1908-1910; Instructor of drawing in the high schools, Springfield, Mass., 1912-1913; Supervisor of Fine and Industrial Arts, State Model School, Trenton, N. J., 1913-1917; Instructor of Drawing, State Normal School, Trenton, N. J., 1917-1920; Professor of Fine and Industrial Arts, Women's College of Delaware, 1920——.

AGNES SNYDER .....*Education*

Graduate of Baltimore Teacher Training School, 1905; part-time student Johns Hopkins University, 1912—; Teacher, Baltimore Public Schools, 1905-1907, 1909-1918; Principal, Hope Farm, Verbank, N. Y., 1907-1909; Critic teacher, Newark, Del., 1918-1920; Demonstration teacher, Cleveland School of Education, Summer 1920; Director of student teaching, Women's College of Delaware, 1920——.

GLADYS FORD PRATT, B. A.....*Librarian*

B. A., Mount Holyoke College, 1914; Simmons College, School of Library Science, 1916; George Washington University, 1917-1918; Assistant, Mount Holyoke College Library, 1914-1917; Cataloguer, Smithsonian Institution Library, 1917-1920; Librarian, Women's College of Delaware, 1920——.

ERNEST CANFIELD VANKEUREN, A. B.....*English*

A. B., Cornell University, 1920; Instructor of English, Delaware College, 1920——.

ADA WILLIM, B. S.....*Chemistry*

B. S., Women's College of Delaware, 1918; Chemist with Hercules Powder Company, 1918; Assistant in Chemistry, Women's College of Delaware, 1919——.

OTHER OFFICERS

SARAH CHURCHMAN .....*Matron*
EDWINA LONG
Assistant to the Business Administrator
GLADYS PRATT, B. A.....*Librarian*
GERTRUDE STURGES, B. A.....*Secretary to the Dean*
EMMA WILSON.....*Director of Halls*

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

ADMISSION: Miss Snyder, Chairman; Miss Null, Professor Brinton, Professor Rich, ex-officio.

ADVANCED STANDING: Professor Conover, Chairman; Professor Dutton, Professor Clark.

APPOINTMENTS: Professor Dutton, Chairman; Professor Sypherd, Professor Clark, Professor Wilkinson.

COLLEGE EXTENSION: Professor Kirkbride, Chairman; Miss Taylor, Professor Rohr.

COURSES AND DEGREES: Professor Wilkinson, Chairman; Professor Sypherd, Professor Drake.

LIBRARY: Professor Harter, Chairman; Miss Watson, Miss Pratt.

PUBLICITY: Miss Wolff, Chairman; Professor Foster, Professor Rohr, Miss Null.

SCHEDULE: Professor Foster.

SCHOLARSHIP: Professor Vaughn, Chairman; Professor Sypherd, Professor Clark, Professor Wilkinson.

ASSEMBLY EXERCISES: Miss Wolff.

SOCIAL AFFAIRS: Miss Dikeman, Chairman; Professor Dutton, Professor Clark.

The Dean of the Women's College is ex-officio a member of all committees of the Academic Council.

GENERAL STATEMENT

The Women's College is the outgrowth of the desire of the people of the State to provide higher education for its young women, expressed by the Delaware State Federation of Women's Clubs, the Delaware State Grange, the Delaware Association of College Women, and other organizations, and finally crystallized as the will of the people by the Act of the State Legislature, in March, 1913, which provided for the establishment of a college for women to be affiliated with Delaware College, the appointment of a commission to erect and equip buildings, and the appropriation of funds for this purpose. The members of the Commission were: Honorable Charles R. Miller, Governor of the State; Honorable George W. Marshall, M. D., President pro-tempore of the Senate; Honorable Chauncey Holcomb, Speaker of the House; Dr. George W. Twitmyer, followed by Mr. Harry Hayward, representing the State Board of Education; Mrs. A. D. Warner, representing the Delaware State Federation of Women's Clubs; Mr. S. J. Wright, representing the Trustees of Delaware College.

BUILDINGS AND GROUNDS

The Women's College is located at the southern end of the University campus. The buildings are of colonial brick, with the exception of the home economics practice house, which is of stucco, and the temporary dormitories, which are of wood.

Science Hall contains the laboratories for physics, chemistry, biology, bacteriology, cookery, and textiles, the art studio, the classrooms for the various lecture

courses, the administrative and department offices, the chapel, library, and gymnasium.

Residence Hall has a housing capacity of 63. Here are located the dining-room, kitchen, and laundry, which serve all resident members of the College. In this dormitory is the Browsing Room, containing a delightful collection of books, which with the furniture for the room were the gifts of two friends of the College; here also is the large room known as the Hilarium, used both for recreation and for lectures or musicales. The wide halls and attractive parlors opening from the ample terrace give an air of welcoming hospitality which makes this building the social center of the College.

Sussex Hall accommodates 67 persons. It is the first of a group of three dormitories which will be built with communicating passages and with kitchen and dining-rooms attached. The building is colonial in design and contains single and double rooms in approximately equal numbers. The Common Room, with its low ceiling, attractive fireplace, and many windows, affords a meeting place for the students and faculty in that building.

Two emergency dormitories, each to house 22 persons, were erected and loaned to the College to meet the increased enrollment for 1920-1921. They are one story in height and are of wood and plaster board construction. The electric lighting, the baths and showers and the heating system are the same as in the other dormitories. The speed with which these buildings were erected has given them the names Topsy and Mushroom.

The Practice House is a laboratory of the Home Economics Department where the students of that department, in small groups, have opportunity to make practical application of the scientific principles of

household management and budget-making. It is a stucco house of medium size located a short distance north of Science Hall. The furnishings are simple but attractive, and the equipment of kitchen and laundry is such as any family might reasonably expect to own.

SCOPE OF THE WORK

The Women's College offers instruction in the following schools:

School of Arts and Science—A four-year course of study leading to the degree of Bachelor of Arts or Bachelor of Science.

School of Education—A four-year course of study leading to the degree of Bachelor of Science in Education.

—A two-year course of study leading to a certificate.

School of Home Economics—A four-year course leading to the degree of Bachelor of Science in Home Economics.

REQUIREMENTS FOR ADMISSION

Candidates for admission to the Freshman class must be at least 16 years of age and of good moral character. They must (1) be graduates of standard four-year high or preparatory schools, or (2) have spent four full years as tudents in such schools, and in addition sustain examinations at the University in *all* subjects which they present for entrance. The examinations are given on the days prescribed in the calendar of the University. All candidates, whether they are graduates of high schools or not, are required to present 15 units as entrance credits.

Students should enter at the beginning of the first term. Applicants will not be permitted to enter the University after the beginning of the first term, unless they have completed an amount of work equivalent to the work already done by the classes which they wish to enter.

All applications and credentials should be sent to the Dean of the College.

SPECIFIC REQUIREMENTS

Fifteen units are required for entrance.

A unit, according to a statement formulated by the National Conference Committee on Standards of Colleges and Secondary Schools, represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. This definition applies to all subjects except English, in which four years' work counts for three units. A four-year secondary school curriculum should be regarded as representing not more that sixteen units of work.

The foregoing statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute periods or their equivalent.

REQUIRED UNITS FOR ADMISSION

	Arts and Science Units	Education Units	Home Economics Units
English (4 years)	3	3	3
Mathematics—			
Algebra	1½	1½	1
Plane Geometry	1	1	1
Foreign Languarge	2	2	2
History	1	1	1
Science	1	1	1
	9½	9½	9

Additional units sufficient to bring the total number up to 15 must be offered from the following list.

Mathematics	
Solid Geometry	½ unit
Foreign Languages	
Greek	1, 2, 3, or 4 units
Latin	1, 2, 3, or 4 units
German	1, 2, 3, or 4 units
French	1, 2, 3, or 4 units

History	
Ancient	1 unit
Mediaeval and Modern	1 unit
English	1 unit
United States	½ or 1 unit
Civics	½ unit
Science	
Botany	½ or 1 unit
Chemistry	1 unit
Physics	1 unit
Physical Geography	½ or 1 unit
Physiology	½ unit
Zoology	½ or 1 unit
Vocational Subjects	See Note 2

NOTE 1. All candidates for admission are examined in English Composition in order to test their ability to do the required English of the Freshman year. Examinations are held in June and September. Candidates are advised to take the examination in June. Those who fail will have the opportunity of working privately on the subject during the summer or of taking a course in English in the six weeks' Summer Session.

NOTE 2. Units in vocational subjects to the number of three will be accepted from graduates of the four-year Smith-Hughes High School Course. Graduates of this course may also substitute two other units for the regular entrance requirement in Modern Language.

NOTE 3. Applicants who present a Modern Foreign Language for entrance will be required to take a test given by the Modern Language department in order that they may be placed in the class in which they are qualified to do satisfactory work. This test will not affect the value of their credits in the subject in so far as entrance is concerned. Conditions in

Foreign Languages must be made up by means of additional work in college.

For a detailed explanation of the requirements for admission, see pages 23 - 37 University Catalogue.

REQUIREMENTS FOR GRADUATION

Candidates for graduation in all courses are required to complete 120 credit term-hours of work in addition to twelve term-hours of Physical Training.

In order to qualify for graduation, a student must also obtain sixty honor points, these honor points to be estimated on the basis of two points for the grade of "A" in a one-credit hour course and one point for the grade of "B" in a one-credit hour course.

Course in Arts and Science

This course is designed to meet the requirements of a liberal education. In accordance with this general aim, considerable freedom in the choice of studies is allowed, particularly in the last two years of the course. The studies of the Freshman year are virtually prescribed.

Arts and Science students who contemplate teaching in the high schools of Delaware must take Psychology 1, Education 7, and Education 9 or 10 in order to meet the requirements for certification.

Graduates from the course in Arts and Science who have offered for admission four years of Latin or Greek or who have completed in college an equivalent amount of work will receive the degree of Bachelor of Arts; all other graduates will receive the degree of Bachelor of Science.

PRESCRIBED STUDIES

	Credits
English	18
Mathematics	6
Modern Language	12
History and Economics	12
Science (Chemistry, Zoology, Biology, or Physics)	12
Electives	60
Physical Training	—
	120

FRESHMAN YEAR

First Term	*Credits*
English, 1	3
Mathematics, 1	3
Language—Latin, French, or German	3
History, 1	3
Elective—One subject (Biology, Physics, Chemistry, Greek, Latin)	3

Second Term	*Credits*
English, 2	3
Mathematics, 2	3
Language—Latin, French, or German	3
History, 2	3
Elective—One subject (Biology, Physics, Chemistry, Greek, Latin)	3

SOPHOMORE, JUNIOR, AND SENIOR YEARS

At the beginning of the Sophomore year every candidate for the degree of Bachelor of Arts or Bachelor of Science shall elect from the following list of subjects a major study, in which she shall complete thereafter 18 hours of work.

During these three years students must take, in addition to the required work in Physical Training, all prescribed subjects not completed in the Freshman year and elective courses sufficient to make a total of thirty credit term-hours each year.

MAJOR ELECTIVES

Biology
Chemistry
English
French or German
Greek or Latin
History and Economics
Mathematics and Physics

ELECTIVE COURSES 1921-1922

	1st Term	2d Term
Ancient Languages, 1 and 2, 3 and 4, 5 and 6	3	3
Ancient Languages, 21 and 22, 23 and 24	3	3
Bacteriology, 1	3	–
Bacteriology, 2	–	3
Biology, 1, 2, 3, 4	3	3
Biology, 5, 6	3	3
Biology, 12	–	3
Chemistry, 1, 2	3	3
Chemistry, 5, 6	3	3
Chemistry, 7, 8	3	3
Chemistry, 9, 10, 11, 12	3	3
Education, 1	3	–
Education, 2	–	3
Education, 4	–	3
Education, 5, 6	–	3
Education, 7	3	–
Education, 9, 10	3	3
Education, 11, 12	1.5	1.5
Education, 13, 14	1.5	1.5
Education, 16	–	3
Education, 17	–	3
English, 12	–	3
English, 15, 16	3	3
English, 19, 28	3	3
English, 39	3	–
Fine Arts, 1, 3	3	–
Fine Arts, 2, 4, 6	–	3
Fine Arts, 5	3	–
Fine Arts, 8, 9	2	2
Fine Arts, 11, 12	3	3
History, 13, 14	3	3
History, 15	3	–
History, 21, 22	3	3
History, 25, 26	3	3
History, 27, 28	3	3
History, 29, 30	3	3
Home Economics, 1, 5, 11	3	–
Home Economics, 2, 4, 6	–	3
Mathematics, 1, 3, 5	3	–
Mathematics, 2, 4, 6	–	3
Modern Languages, see pages 60-64.		
Music, 5 and 6	3	3
Physics, 1, 2, 3, 4	3	3
Physiology and Hygiene, 1, 2	3	3
Psychology, 1, 2	3	3
Sociology, 1	3	–
Sociology, 2, 6	–	3

Courses in Education

I. TWO-YEAR COURSE

This course is designed to prepare teachers for elementary schools. It meets the requirements in Delaware for a first grade elementary teacher's certificate and is open to students who can fulfill the regular college entrance requirements or who may receive a scholarship in the College.

FIRST YEAR

First Term		*Credits*	*Second Term*		*Credits*
Ed	1 Introduction to Teaching	3	Ed	2 Observation and Participation .	3
Ed	11 English in Elementary Schools	3	Ed	12 English in Elementary Schools	3
Ed	17 Arithmetic	3	Soc	6 Community Civics	3
H	1 Modern and Contemporaneous Europe	3	H	1 Modern and Contemporaneous Europe	3
B	9 Science in Elementary Schools	3	Ph	4 Hygiene and Sanitation ...	3
FA	Art Appreciation	2	FA	Drawing and Industrial Arts.	2
Mu	1 Public School Music	1	Mu	2 Public School Music	1
P	9 Physical Education		P	10 Physical Education	

SECOND YEAR

First Term		*Credits*	*Second Term*		*Credits*
Ed	9 Student Teaching	3	Ed	10 Student Teaching	3
Ed	13 The Teaching of Geography ...	3	Ed	14 The Teaching of Geography ...	3
H	5 History of U. S. (1763-1848) ..	3	H	6 History of U. S. (since 1848)..	3
Ed	5 Primary Methods	3	Ed	16 The Teaching of History and Social Science.	3
FA	Drawing and Industrial Arts.	3	E	44 Appreciation of Literature ...	3
Mu	3 Music	1½	Mu	4 Music	1½
P	11 Physical Education		P	12 Physical Education	

Students who can fulfill the requirements for admission to this course will be given credit for any of the foregoing subjects satisfactorily completed in an approved summer school. In general four summer schools will be regarded as equivalent to one regular year, but the College reserves the right to

decide in each case the amount of credit to be allowed for summer school work.

Graduates of the two-year course who have previously satisfied the regular entrance requirements of the College will be awarded a Bachelor's degree in Education upon the satisfactory completion of 60 credit hours (two years) of additional college work, these 60 hours to include all prescribed subjects not taken in the two-year course.

II. FOUR-YEAR COURSE

A standard college course leading to a Bachelor's degree in Education and designed to meet the needs of students who expect to teach academic subjects in secondary schools or to become principals of elementary or high schools.

Students who do not wish to teach may substitute courses of equal value for required courses in Methods of Teaching.

PRESCRIBED STUDIES

	Credits
Education and Psychology	21
English	18
History	12
Modern Language	12
Science	12
Mathematics	6
Sociology and Economics	6
Sanitation and Hygiene	3
Art	3
Electives	27
Physical Education	
	120

FRESHMAN YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 1	3	English, 2	3
History, 1	3	History, 2	3
Language — French or German	3	Language — French or German	3
Mathematics, 3	3	Mathematics, 2	3
Science—Biology, Chemistry, or Physics	3	Science—Biology, Chemistry, or Physics	3

SOPHOMORE YEAR

First Term	*Credits*	*Second Term*	*Credits*
Education, 1	3	Education, 2	3
English, 5	3	English, 6	3
History, 5	3	History, 6	3
Language — French or German	3	Language — French or German	3
Fine Arts, 1	3	Physiology, 4	3

JUNIOR YEAR

First Term	*Credits*	*Second Term*	*Credits*
Psychology, 1	3	Education, 4	3
History, 25 (Economics)	3	Sociology, 2	3
Science—Biology, Chemistry, or Physics	3	Science—Biology, Chemistry, or Physics	3
Electives	6	Electives	6

SENIOR YEAR

First Term	*Credits*	*Second Term*	*Credits*
Education, 9	3	Education, 10	3
Education, 7	3	English, 10	3
English, 9	3	Electives	9
Electives	6		

Every candidate for a Bachelor's degree in Education must choose her electives so that, upon completing the course, she will have at least 18 credit hours in not fewer than two academic subjects.

Course in Home Economics

The course in Home Economics is designed to meet the needs of students who intend to teach homemaking in secondary schools or who wish to apply the knowledge gained from this course to the management of the home.

PRESCRIBED STUDIES

	Credits
English	12
Economics, History, Sociology	15
Chemistry	12
Physics	6
Bacteriology	6
Physiology—Hygiene	6
Fine Arts	6
Education	6
Home Economics	39
Electives	12
Physical Training	
	120

FRESHMAN YEAR

First Term	*Credits*	*Second Term*	*Credits*
English	3	English	3
Chemistry	3	Chemistry	3
Physics	3	Physics	3
Home Economics, Textiles, and Laundering	3	Home Economics 2, Clothing	3
Fine Arts	3	Home Economics 4, Foods and Cookery	3
	15		15

SOPHOMORE YEAR

First Term	*Credits*	*Second Term*	*Credits*
English	3	English	3
Chemistry — Household and Organic	3	Chemistry — Physiological	3
Physiology—Hygiene	3	Physiology—Hygiene	3
History, 5	3	History, 6	3
Home Economics, 5—Foods and Cookery	3	Home Economics, 6—Clothing	3
	15		15

JUNIOR YEAR

First Term	*Credits*
Educational Psychology.	3
Bacteriology	3
Home Economics, 9—Nutrition	3
Home Economics, 11—Health, Nursing, and Child Care	3
Elective	3
	15

Second Term	*Credits*
Principles of Education.	3
Sanitary Science	3
Home Economics, 10—Nutrition	3
Fine Arts	3
Elective	3
	15

SENIOR YEAR

First Term	*Credits*
Economics	3
Home Economics, 13—Methods	3
Home Economics, 17—Practice House Home Management	6
Elective	3
	15

Second Term	*Credits*
Economics	3
Home Economics (Elective)	3
Home Economics, 13—Practice Teaching	3
Sociology	3
Elective	3
	15

SUBJECTS OF INSTRUCTION

By Departments

In this detailed statement of the subjects of instruction, the number of credit term-hours is printed in italics at the end of each course. If the actual hours of recitation, lecture, and laboratory work differ from the credit hours, the number of actual hours is stated immediately before the credit hours.

Odd numbers are assigned to first-term courses; even numbers to second-term courses.

Credits for laboratory work depend upon the nature of the work and the amount of preparation required. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour.

ANCIENT LANGUAGES AND LITERATURES

Professor Conover

Throughout the course the aim is to enable the student to acquire facility and quickness in reading at sight and familiarity with the ancient order of thought. Word-meaning is fixed by inspecting form, derivation, and comparison with synonyms. The authors are selected with a view to their representative character. The public and private life of the Greeks and Romans and their influence on modern literature and civilization are continually kept before the minds of the students. English derivatives and words kindred to all Indo-European tongues are frequently noted, and the general principles of comparative philology are explained and applied.

LATIN

AL 1 and 2 Cicero, De Senectute and De Amicitia. Ovid, Metamorphoses, etc. Prose Composition.

Six credit hours

AL 3 and 4 Livy, 21st or 22d book. Horace, Odes, Epodes, Satires, Epistles. Prose Composition.

Six credit hours

AL 5 and 6 Tacitus, Germania and Agricola. Plautus, Captives and Trinummus. Juvenal, Satires.

Six credit hours

AL 7 and 8 Seneca, Tragedies or Moral Essays. Terence, Adelphoe and Andria. Quintilian, Books X and XII. Lectures on Latin Literature and Inscriptions.

Six credit hours

GREEK

AL 21 and 22 White's First Greek Book. Anabasis I, II.

Six credit hours

AL 23 and 24 Anabasis III, IV. Homer, Iliad, I-III. Herodotus, VII, VIII.

Six credit hours

AL 25 and 26 Lysias, Orations. Plato, Apology and Crito. Aristophanes, Plutus or Clouds.

Six credit hours

BACTERIOLOGY

PROFESSOR PALMER

Ba 1 General Bacteriology. A lecture and laboratory course, including the morphology, biological characters, distribution, and classification of bacteria and their relation to plant and animal life. In the laboratory the student will be instructed in the technique necessary for practical work in bacteriology, including cleaning and sterilization of apparatus, making culture media, and studying bacteria in cultures and under the microscope. Required of Juniors in Home Economics and elective for Juniors and Seniors in Arts and Science. One lecture and six laboratory hours a week. Fee, $2.00.

Three credit hours

Ba 2 Sanitary Science. (Prerequisite: Ba 1.) A tudy of our environment in its relation to health and lisease, including food, water, air, soil, disposal of vastes, vital statistics, diseases of occupation, indus- rial hygiene, and public health. Provision is to be nade for at least five field trips to study rural and rban conditions affecting public health. Required of uniors in Home Economics and elective for Juniors nd Seniors in Arts and Science.

Three credit hours

BIOLOGY

MISS WOLFF

B 1 General Biology: Part 1. Zoology. A gen- ral treatment of the principles of biology and a survey f the animal kingdom from protozoa to the mammals. he biological and economic significance of each group s discussed in lectures. The laboratory periods are evoted to a study of the structure of representative nimals, and to field trips. Two lecture periods, two vo-hour laboratory periods, and assigned reading each eek. Laboratory fee, $2.50.

Three credit hours

B 2 General Biology: Part II. Botany. (Pre- equisite: B 1.) A survey of the plant kingdom from ne-celled forms to flowering plants, inclusive. The iological and economic significance of each group is iscussed in lectures. The laboratory periods are evoted to a study of the function and structure of the arts of representative plants, and to field work, hereby the student may become familiar with the owers, trees, shrubs and weeds of the region. Two vo-hour laboratory periods and two lecture periods, ith assigned reading each week. Laboratory fee, 2.50.

Three credit hours

B 3 Physiology of Plants. (Prerequisite: Six credit hours of Biology.) This course treats of the activities of plants: their irritability, nutrition, growth, and reproduction. The various phases are discussed and illustrated by laboratory experiments. Two lectures and four laboratory hours a week, with assigned reading. Laboratory fee, $2.50.

Three credit hours

B 4 Systematic Botany. (Prerequisite: Six credit hours of Biology). This course is largely field work and deals with the identification of trees, shrubs, and herbs in both winter and summer condition, and with their systematic position. Laboratory fee, $2.50.

Three credit hours

B 5 and 6 Comparative Anatomy. (Prerequisite: Six credit hours of Biology). This course deals with the comparison of representative chordates frim amphioxus to mammals. Typical chordates are dissected in the laboratory and the evolution of their anatomy studied. It is suggested that this course be succeeded by Human Physiology. Two lecture periods, two two-hour laboratory periods, and assigned readings, throughout the year. Laboratory fee, $5.00.

Six credit hours

B 9 Elementary Science for Teachers. A study of the commonplace plants and animals of the locality. Little attention is given to the systematic position of the forms studied, but the economic significance of insects, weeds, trees, birds, etc., is discussed in lectures. Phenomena specially interesting and instructive to the child will be discussed. Laboratory hours will be devoted to observations of these phenomena both indoors and in the field. Two two-hour laboratory periods and two one-hour lecture periods a week. Laboratory fee, $2.50.

Three credit hours

B 12 Genetics. A study of heredity with especial reference to the methods and results of recent investigations, and their application to eugenics. Two lectures and one conference each week, and assigned reading. Open to Seniors and Juniors.

Dean Robinson *Three credit hours*

Note: Courses B 3 and B 4 and Courses B 5 and B 6 will not be given in the same year. The needs of students desiring the courses will determine which will be given.

CHEMISTRY

PROFESSOR DRAKE AND MISS WILLIM

C 1 and 2 Inorganic Chemistry. This course includes a study of the fundamental laws of chemical action, the properties, uses, and methods of preparation of the elements and their compounds. In the laboratory the student performs experiments illustrating the topics in the lectures. Freshman year. Two demonstrations, one recitation, and four laboratory hours.

Six credit hours

C 3 Qualitative Analysis. (Prerequisite: C 1 and 2.) The identification and separation of the metals and of the acids are taught. The systematic analysis of simple and complex substances is taken up and a few commercial products are analyzed. Sophomore or Junior year. One lecture and six laboratory hours.

Three credit hours

C 4 Quantitative Analysis. (Prerequisites: C 1 and 2, and 3.) This is an elementary course in which the simpler methods of gravimetric and volumetric analysis are studied. Sophomore or Junior year. One lecture and six laboratory hours.

Three credit hours

C 5 and 6 Organic Chemistry. (Prerequisite: C 1 and 2.) This course includes a study of the im-

portant classes of organic compounds, the methods of preparation, reactions, relations to each other, and structural formulas. In the laboratory, organic compounds are prepared, illustrating important types of reactions, and their qualitative reactions studied. Sophomore or Junior year. One lecture and six laboratory hours. [Omitted in 1921-1922.]

Six credit hours

C 7 and 8 Household and Food Chemistry. (Prerequisite: C 1 and 2.) This course is designed to meet the needs of the students in Home Economics. After a brief introduction to organic chemistry it treats of the chemistry of foods, beverages, baking materials, preservatives, etc., and the elementary physiological chemistry of the digestive tract. Sophomore year. One lecture and six laboratory hours.

Six credit hours

C 9 and 10 Physiological and Food Chemistry. (Prerequisites: C 1 and 2, 4, 5 and 6.) This course is designed for Seniors majoring in chemistry. It treats in considerable detail the chemistry of fats, carbohydrates, and proteins, the physiological chemistry of digestion, the blood, animal heat, etc. Part of the time will be devoted to the quantitative analysis of typical food products, such as milk, cereals, etc. Senior year. One lecture and six laboratory hours.

Six credit hours

C 11 and 12 Inorganic Chemistry. A course designed to meet the needs of students who have had one year of high school chemistry. After a review of the fundamental laws of chemical action, emphasis is laid on elementary analytical chemistry and inorganic preparations. Students may be admitted to this course only on the presentation of their high school note books with a statement of the number of hours spent in the laboratory and classroom. Two lectures and five laboratory hours a week.

Six credit hours

EDUCATION, PSYCHOLOGY, AND SOCIOLOGY

EDUCATION

PROFESSOR WILKINSON, PROFESSOR RICH, ASSISTANT PROFESSOR ROHR, AND MISS SNYDER

Ed 1 Introduction to Teaching. This is a general survey course designed to give the student a preliminary acquaintance with the problems of teaching from the standpoint of the teacher. It includes a consideration of such topics as the organization of the school, nature and interests of pupils, value and selection of subject-matter, types of teaching, hygiene of pupils and school surroundings, class management and discipline. The class discussions are based on supervised observation in the practice school supplemented by assigned readings.

Three credit hours

Ed 2 Observation and Participation. The object of this course is to give to students a concrete knowledge of the best educational practices with respect to the psychology of teaching. Supervised observations in the practice school and some actual participation by the student as teacher-assistant are required. These furnish the basis of the classroom discussions from which standards for evaluating methods of teaching are derived.

Three credit hours

Ed 4 Principles of Education. This course begins with a brief review of present-day tendencies and practices in education; traces the origin and development, since the time of Rousseau, of important educational ideals with reference to such problems as aims, curriculum-making, methods of teaching, organization, etc., and seeks to integrate the principles derived into a unified body of educational doctrine.

Three credit hours

Ed 5 Special Methods in Primary Grades. This course is offered for those who are taking primary

work as a specialized course. It takes up the psychology of this period and applies it to the subjects of reading and language, number, and a study of the surroundings.

Three credit hours

Ed 6 High School Aims and Methods. This course includes a study of the high school pupil, the aims of secondary education in a democratic society, and the fundamental principles that underlie the selection of subject-matter and methods of teaching in the high school. The work consists of discussions, assigned readings and reports, and the application by each student of the principle derived to the teaching of her special subject.

Three credit hours

Ed 7 Educational Administration and Supervision. A study of some of the more important technical problems of the school principal with a view to the discovery and use of principles and standards for determining and promoting the efficiency of the school.

Three credit hours

Ed 9 and 10 Practice Teaching. The work consists of the preparation of lesson plans, the collection of materials, keeping of records, making of reports, etc. The students first do individual teaching, then group, and finally the actual teaching of a subject to a regular class. Students in the two-year course take charge of an elementary grade and students in the four-year course teach in the high school. The purpose of these courses is to give the student some actual practice in those activities that constitute classroom teaching.

Six credit hours

Ed 11 and 12 English in Elementary Schools. This course includes (a) practice in correct usage through drills suitable for use in elementary grades; (b) practice in written language work of various types

with discussions of projects through which such work can be motivated for children and of special methods of teaching written language; (c) the presentation of principles and methods of teaching silent and oral reading, and a survey of the literature suitable for use in the various grades, with methods of teaching it.

Three credit hours

Ed 13 and 14 Geography. This course includes a survey of the physical, industrial, and political geography of each continent with a consideration of the fundemental principles underlying geographic controls. The study begins with the home and its environs, widens to include the State and the United States, and finally all continents and countries. Much attention is given to the physical conditions which influence the production of raw materials, especially those that enter into food, clothing, and shelter, the development of manufactures, the laying out of routes, the location of markets and the distribution of raw and manufactured articles. The use of the problem-project method is demonstrated. Suggestions for the use of pictures, specimens, maps of various kinds, etc., are given.

Three credit hours

Ed 16 The Teaching of History and Social Science. This course aims to give the modern point of view regarding the teaching of history and civics in the elementary school. It stresses the fact that the chief aim of history teaching in the grades is not to give information about the past, but to enable the learner to interpret present conditions and to solve present problems more intelligently. It therefore emphasizes the industrial and social aspects of the subject. The course deals largely with the history of the United States and Delaware, though some attention is given to European history as a background. Many possible problems are discussed and outlined and some illustrative ones are worked out in class. Special attention

is given to methods of study, use of textbooks, supplementary materials, etc.

Three credit hours

Ed 17 Arithmetic. This course deals with the subject-matter and methods of teaching arithmetic in elementary schools. It considers projects suitable to the several grades through which work in arithmetic may be motivated, and it stresses the use of business methods, the selection of practical material, the elimination of subject-matter that does not function in life, and the use of systematic drills to fix habits of speed and accuracy. Subject-matter is taught along with the methods, and tests for speed and accuracy are given at intervals both to locate weaknesses in the class that need to be worked on and to illustrate their use with children.

Three credit hours

PSYCHOLOGY

Psy 1 Psychology. This course aims to give the student such a knowledge of the factors and laws of human behavior as the teacher needs to possess. It includes a study of such topics as instincts and native capacities, methods and laws of learning, individual differences, and mental hygiene.

Three credit hours

Psy 2 Child Psychology. The course aims to follow the development of child life in its various aspects from infancy through adolescence. Two lecture hours are correlated with one hour of directed observation of children and with individual problems involving psychological testing. Psychology 1: prerequisite.

Three credit hours

SOCIOLOGY

Soc 1 Introduction to the Study of Society. A survey of social origins, forces, laws, and aims, with

a view to laying a foundation for the scientific study of practical social problems.

Three credit hours

Soc 2 Practical Sociology. A course dealing primarily with social conditions, their causes, significance to society, and possible means of improvement. Among the topics treated the following receive special attention: Family life, immigration, public health, child labor, women in industry, poverty, care of dependents and defectives, crime and punishment, the conservation of natural resources.

Three credit hours

Soc 6 Community Civics. The purposes of this course are (1) to acquaint the student with the nature of community life, its activities, mutual interests, and the responsibilities of the individual; and (2) to give her a knowledge of all the agencies, local, state, and national, that now exist and that should be provided for the promotion of community welfare.

Three credit hours

ENGLISH

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, AND MR. VAN KEUREN

The courses in the Department of English are designed (1) to enable every student at graduation to express her ideas, orally or in writing, in accurate, clear, effective English; and (2) to give to students through required and elective work an acquaintance with the best authors in English and American Literature and an appreciation of good poetry and prose. All Freshmen are required to take Composition, which involves training in oral and written expression; all Sophomores, a general course in Literature, which treats of writers, types, and movements. Seniors in Arts and Science and in Education are required to take an additional course in English. Elective courses in 1922-1923 will be No. 17, 21, 35, 12, 32, and 34.

E 1 and 2 Composition. An elementary course which lays especial stress on accuracy and clearness in expression. Recitations, themes, practice in public

speaking, conferences, and outside readings. Required of all Freshmen.

Professor Dutton and Mr. Van Keuren *Six credit hours*

E 5 and 6 Literature. General Survey. A brief survey of the history of the English language and literature, followed by a more detailed and thorough study of the main literary forms—narrative and lyric poetry, the drama, the novel, and the essay. Discussions, lectures, outside readings, reports, and conferences. Required of all Sophomores.

Associate Professor Foster and Mr. Van Keuren *Six credit hours*

E 9 and 10 Composition and Literature. A study of the English essay, with exercises in expository writing, first term; a study of the short-story in English, with exercises in narrative writing, second term. Required of Seniors in Arts and Science and in Education.

Professor Sypherd *Six credit hours*

E 12 Composition. An advanced course in narrative and descriptive writing. Themes, outside reading, and conferences. Elective for Sophomores and Juniors in Arts and Science.

Mr. Van Keuren *Three credit hours*

E 15 Literature. Romantic Movement. A study of the social, philosophical, and literary tendencies which are found in the prose and poetry written between 1798 and 1832. Elective for Juniors and Seniors.

Associate Professor Foster *Three credit hours*

E 16 Literature. Victorian Poetry. This course is centered about the poems of Browning, Tennyson, Arnold, and Swinburne. The aim of the course is to obtain a knowledge of the poetry of the period, to study the poems as an expression of the philosophy of life of each of the poets, and to correlate this poetry

with the social movements of the time. Elective for Juniors and Seniors.

ASSOCIATE PROFFESSOR FOSTER

E 17 Literature. Nineteenth Century Novel. A study of the main novelists of the century: Scott, Dickens, Thackeray, Eliot, Meredith, and Hardy. Collateral reading in the contemporary novel. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 19 Literature. Shakspere. The Elizabethan stage; social, political, and literary conditions; a study of selected plays. Elective for Juniors and Seniors.

PROFESSOR DUTTON *Three credit hours*

E 21 Literature. Modern Drama. A cursory view of the English drama since Shakspere. Recent and contemporary European drama (Continental plays in translation). Elective for Juniors and Seniors. [Omitted in 1921-1922.]

Three credit hours

E 28 Literature. A literary study of the Bible. This course is an introduction to the literary study of the English Bible. It involves a general consideration of the contents and the composition, a brief review of the history of the Translations or Versions, a discussion of the literary forms and the literary qualities, and a study of its influence in English Literature.

PROFESSOR SYPHERD *Three credit hours*

E 32 Literature. Classics in Translation. A study of Greek and Roman classics which have influenced English Literature and English thought. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 34 Literature. A general survey of the field of American Literature from Franklin to the present time, and an intensive critical study of the most important work of the chief American poets and prose

writers. Lectures, recitations, outside reading, and reports. Elective for Sophomores and Juniors. [Omitted in 1921-1922.]

PROFESSOR DUTTON *Three credit hours*

E 35 Literature. Chaucer. A critical and appreciative study of some of the Canterbury Tales and of the other poems of Chaucer. Elective for Juniors and Seniors.

Three credit hours

E 39 Literature. Emerson. A study of Emerson as poet, essayist, and philosopher. Elective for Juniors and Seniors.

PROFESSOR DUTTON *Three credit hours*

E 44 Literature. This course is an appreciative study of certain masterpieces in English and American Literature. It aims to broaden the student's knowledge of literature and to give an understanding and appreciation of literary ideals and methods. Required of students in the two-year course in Education.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

FINE ARTS

MISS TAYLOR

FA 1 Art Appreciation and History. A study of the historical development of painting, sculpture, and design, preceded by study of the space of arts, composition of line and mass, and color theory. Lectures are illustrated with slides and prints. Students are required to keep note books with prints and tracings.

Three credit hours

FA 3 Principles of Design. A course in the elementary principles of art structure, practice in the use of line, dark and light, and color, with pencil, charcoal, crayon, brush and ink, and water color. Study of spacing, rhythm, color theory. Adaptations of given

designs and practice in original design. Studio work five hours and lecture one hour.

Three credit hours

FA 4 Applied Household and Costume Design. This course supplements FA 3. Applications are made of design principles to problems of the home and costume. Study of house interiors in line, dark and light, and application of color harmony is taken up. Adaptations of given designs for costumes to definite figures are made, and practice is given in original costume design, and design for textiles to be applied as embroidery, stenciling, block printing. Studio work five hours and lecture one hour.

Three credit hours

FA 5 Art Appreciation. A course for elementary teachers. The course is similar to FA 1, but less emphasis is put on the historical development of painting, sculpture and design, and greater emphasis on the elementary principles of art structure and color theory.

Two credit hours

FA 6 House Planning and Furnishing. An advanced course completing the work of FA 3 and 4. It includes drawing of house plans to scale, study of styles of architecture, period furniture, selection, framing and hanging of pictures, and problems of furnishing from both the artistic and economic standpoint. Studio work five hours and lecture one hour.

Three credit hours

FA 8 and 9 Drawing and Industrial Arts. A course for elementary teachers offering practice in representation and illustration, blackboard drawing, lettering, composition, design and color related to the regular school work. Problems in schoolroom decoration, interior decoration and costume design. A study of some of the important industries of the country, involving simple problems in poster making, book-

making, cardboard construction, weaving, claymodeling, etc. Studio work four periods per week.

Four credit hours

FA 11 and 12 Drawing and Painting. This course offers practice in line and tone, perspective, technique of charcoal and crayon, and painting in water color from still life, supplemented by study of modern art and art processes. Studio work five hours and lecture one hour.

Six credit hours

HISTORY AND POLITICAL SCIENCE

Professor Vaughn and Associate Professor Bevan

The courses in this Department are arranged in the approximate order in which they should be taken by the student. In the first two years certain courses are required; all other courses are elective for properly qualified students. Sophomores may, with permission of the Department, elect courses from 9 to 16 in addition to the required work. Courses 9 to 16 will usually be given in alternate years. Courses 9, 10, 11, 12, and 16 are omitted in 1921-1922.

In all courses emphasis is placed upon systematic and thoughtful work, upon classroom discussion and upon the problems of present-day citizenship.

H 1 and 2 Modern and Contemporary Europe. An introductory course dealing with the history of Europe from the close of the Napoleonic Wars to the present time, with special emphasis on the period since 1870. Required of Freshmen in Arts and Science and Education.

Professor Vaughn and Associate Professor Bevan

Six credit hours

H 5 History of the United States (1763-1848). An advanced course in American history, embracing a study of the Revolutionary period, the formation of the Constitution, foreign relations, early national development, Jacksonian democracy, westward expansion, and the Mexican War. Required of Sophomores

in Arts and Science, Home Economics, and the four-year course in Education.

Professor Vaughn and Associate Professor Bevan
Three credit hours

H 6 History of the United States (since 1848). A continuation of course 5, dealing with the slavery controversy, the Civil War, reconstruction problems, material development, and contemporary history and problems. Required of Sophomores in Arts and Science, Home Economics, and the four-year course in Education.

Professor Vaughn and Associate Professor Bevan
Three credit hours

H 11 Mediaeval Europe. A general survey of European history, institutions, and culture from the downfall of Rome to the close of the Middle Ages. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

Associate Professor Bevan *Three credit hours*

H 12 The Renaissance and Reformation. The political background of the period is studied, but special emphasis is laid on social and economic conditions, the developments in art and literature, and the causes and results of the Protestant revolt. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

Three credit hours

H 13 The French Revolution and Napoleon. A special study of the Revolutionary era; the characteristics of the Régime, the philosophers and economists, the course of the Revolution, the rise of Napoleon, and the wars of the Empire. Elective for Juniors and Seniors. [Omitted in 1921-1922.]

Three credit hours

H 14 Modern Russia. A history of Russia in the modern period, an appreciation of Russian institutions and culture, and a study of contemporary revolutionary movements. Russia's relation to Near

Eastern problems will be emphasized. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR BEVAN *Three credit hours*

H 15 China and Japan. A brief study of the history and problems of the Far East, with special reference to China and Japan. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR BEVAN *Three credit hours*

H 21 and 22 American Government. A general course dealing with the organization and activities of our American government—both national and state. Considerable stress is placed upon practical problems and present-day developments. Elective for Juniors and Seniors.

PROFESSOR VAUGHN *Six credit hours*

H 25 Principles of Economics. A one-semester introductory course which aims to give a general survey of Economics. Readings and Reports. Required of Juniors in Education and Seniors in Home Economics. Elective for Juniors and Seniors in other courses.

ASSOCIATE PROFESSOR BEVAN *Three credit hours*

H 26 Economic Problems. (Prerequisite: H 25). A continuation of course 25, dealing with selected topics and special problems of contemporary interest and importance. Required of Seniors in Home Economics. Elective for Juniors and Seniors in other Courses.

ASSOCIATE PROFESSOR BEVAN *Three credit hours*

H 27 and 28 Studies in Delaware History. An advanced course which offers opportunity to develop special topics in the social, economic, and political history of the state. The aim is partly information and partly training in research work. Elective for Juniors and Seniors.

PROFESSOR VAUGHN *Four or six credit hours*

H 29 and 30 Research Course. The student may

select her topic for investigation from any of the fields of work outlined above. Elective for Seniors.

PROFESSOR VAUGHN *Six credit hours*

HOME ECONOMICS

PROFESSOR CLARK, MISS DIKEMAN, AND MISS NULL

HE 1 Textiles and Laundering. A study of textiles, including cotton, wool, silk, linen, and other fabrics, in order to enable students to use good judgment in purchasing and using these fabrics. A study of the principles, processes, and equipment involved in laundering, with emphasis on the applications of chemistry and physics. Two hours lecture and two hours laboratory. Laboratory fee, $2.50.

MISS DIKEMAN AND MISS NULL *Three credit hours*

HE 2 Clothing. Handwork and elementary sewing; study, practice and application of fundamental stitches to simple garments and household furnishings; darning, patching, crocheting, knitting; use of commercial patterns; use of sewing machine. One hour lecture and five hours laboratory. Laboratory fee, $2.50.

MISS DIKEMAN *Three credit hours*

HE 4 Foods and Cookery. A study of the principles of cookery applied to the preparation of a large variety of foods. Labor-saving devices, household routine, and household accounting will be considered in connection with this course. One hour lecture and five hours laboratory. Laboratory fee, $7.50.

MISS NULL *Three credit hours*

HE 5 Foods and Cookery. A study of cooking in family quantities, including menu-making, the preparation of meals and table service; marketing and the cost of food for the family group. One hour lecture and five hours laboratory. Laboratory fee, $7.75.

MISS NULL *Three credit hours*

HE 6 Clothing. A study of the drafting of patterns, modeling and designing, cutting and making of a simple wash dress, a tailored skirt, wool skirt, and an afternoon dress. One hour lecture and five hours laboratory. Laboratory fee, $3.00.

MISS DIKEMAN *Three credit hours*

HE 9 Nutrition. A study of the chemical elements and compounds involved in the nutrition of the human body; digestion and metabolism; nutritive value and cost of food. Planning and preparation of dietaries adequate in energy and protein for various types of individuals. Two hours lecture and two hours laboratory. Laboratory fee, $7.50.

MISS NULL *Three credit hours*

HE 10 Nutrition. A study of minerals and vitamines as essentials of an adequate diet. Planning and preparation of dietaries to meet the needs of families and individuals of various ages and types. A consideration of the factors influencing the cost of food and principles of wise expenditure; food fads and sanitation; diet in disease. Two hours lecture and two hours laboratory. Laboratory fee, $7.50.

MISS NULL *Three credit hours*

HE 11 Child Care and Health Nursing. A study of the physical care of infants and children in relation to proper food, clothing, bathing, sleep and air; preventive measures for minor illnesses; care of the sick and first aid treatment for common household emergencies. Observation in hospitals and institutions. Two hours lecture and two hours laboratory. Laboratory fee, $3.75.

MISS DIKEMAN *Three credit hours*

HE 13 Methods. A consideration of the principles of teaching as applied to Home Economics; a survey of vocational education; the organization and management of Home Economics courses in vocational schools and classes; planning a course of study. A study of equipment problems. Three hours lecture.

PROFESSOR CLARK *Three credit hours*

HE 14 Practice Teaching. The teaching of Home Economics subjects to high school students; preparation of lesson plans, collection of illustrative material. Seven hours teaching and observation.

PROFESSOR CLARK *Three credit hours*

HE 17 or 18 Home Management. Supervised management of a family group, including the keeping of the budget, preparation of meals, daily and weekly care and repair of the home. A study of scientific management as applied to the home. First term for Seniors; second term for Juniors. One hour lecture and fifteen hours practice house.

PROFESSOR CLARK *Six credit hours*

HE 19 Practice in Demonstration Cookery. This course aims to give to students practice in public lectures and demonstrations such as are useful for general teaching and for instructors in farmers' institutes, women's clubs, settlements, and extension work. One hour lecture and five hours laboratory. Laboratory fee, $7.50.

Three credit hours

HE 20 Foods and Cookery. An advanced course which aims to give the student a wider knowledge of available food materials; of the great variety of seasonings and flavors; and practice in some of the more complicated processes of cookery. One hour lecture and five hours laboratory. Laboratory fee, $7.50.

Three credit hours

HE 22 Clothing-Dress Design. This course gives practical training in the application to costume of line, color harmony, dark and light, and texture; practice in using and adapting for different individuals and purposes designs from current fashion magazines, and the use of appropriate materials. One hour lecture and five hours laboratory. Laboratory fee, $5.50.

MISS DIKEMAN *Three credit hours*

MATHEMATICS

PROFESSOR HARTER AND ASSISTANT PROFESSOR REES

Three hours a week in Algebra and Trigonometry are required of all students in the Freshman year in the course in Arts and Science and in the course in Education. Elective courses are provided for students who may desire to continue Mathematical work beyond the Freshman year.

M 3 College Algebra, including a rapid review of the Elements, Quadratics, Arithmetical and Geometrical Progressions, Permutations and Combinations; Complex Numbers; Theory of Equations; Logarithms. Required of Freshmen in Arts and Science, and in Education.

Three credit hours

M 2 Trigonometry, Plane and Spherical. Required of Freshmen in Arts and Science, and in Education.

Three credit hours

M 5 Analytic Geometry; Conic Sections and Higher Plane Curves in Cartesian and Polar Co-ordinates; Solid Analytic Geometry. An elective course open to all who have the requisite preparation.

Three credit hours

M 6 An introductory course to the Calculus. Open to election to such as have completed M 5.

Three credit hours

M 7 and M 8 (Prerequisites: M 5 and M 6.) Differential and Integral Calculus, and Differential Equations.

Six credit hours

M 9 The History of Mathematics. Elective.

One credit hour

M 13 Geometry of Space. A course for students in Arts and Science, and in Education who do not offer Solid Geometry upon entrance and who wish to pursue mathematics studies in advance of M 2. No college credit will be given for work done in this course.

MODERN LANGUAGES AND LITERATURES

PROFESSOR E. L. SMITH, ASSISTANT PROFESSOR SALESKI, ASSISTANT PROFESSOR BRINTON, AND ASSISTANT PROFESSOR KIRKBRIDE

French and German are among the required subjects of study, and Spanish and Italian are offered to those who wish to elect them. With the approval of the Academic Council any year or years of this work may be elected by a student in addition to the amount required in her course.

The aim of the courses offered in Modern Languages is to provide elementary and intermediate instruction in German, French, Spanish, and Italian. Students who have completed commendably the courses offered in these languages may expect to possess a good pronunciation, an accurate reading knowledge of the language, and an acquaintance with the more important authors and some familiarity with the more important literary groups and movements. The scientific and commercial aspects of the languages receive due attention but without overlooking the more important cultural values. An effort is made to acquaint the student with the several European civilizations from the linguistic and literary point of view, and to inspire in her such a love for these languages and literatures as will be a source of pleasure and intellectual growth.

FRENCH

ML 1 and 2 Beginning French. For Freshmen who may elect French to satisfy their required work in Modern Languages. This course is a required course for students whose entrance preparation in French has been found to be deficient (see page....). Upon satisfactory completion of this course, students are prepared to enter ML 3 and 4.

Six credit hours

ML 3 and 4 Intermediate French. This course is designed to meet the demands of Freshmen who have satisfactorily passed the departmental entrance test in French. A rapid but thorough review of French grammar. French composition is continued throughout the course by means of themes, reports, letter-writing, etc. Aural and phonetic training. One period a week is devoted to the rapid reading of

French texts, newspapers, etc., which are used as a basis for vocabulary building.

Six credit hours

ML 5 and 6 Advanced French. Continuation of the work of ML 3 and 4. Formal Composition. Outline of the history of French literature with illustrative reading. Aural training and definite emancipation from the dictionary are two primary aims of this course. Prerequisite: ML 3 and 4, or their equivalent.

Six credit hours

ML 7 Continuation of ML 5 and 6. First semester of Junior year. Elective for students who have completed ML 5 and 6 or equivalents. Aim is a wider reading knowledge and further vocabulary building. Texts chosen to form introduction to the work in literature courses. Conducted entirely in French.

Three credit hours

ML 8 Literature. Second half of the Junior year. Elective for students who have completed ML 7. French literature from 1600 to Chateaubriand. French classic drama—Corneille, Racine and Moliere. Voltaire, Diderot and Rousseau. Readings in literary history and criticism.

Three credit hours

ML 8T Teaching of French in Secondary Schools. Second semester of Junior or Senior years. For students who have completed ML 7 and who desire to prepare for the teaching of the language methods, materials and texts, etc. Students taking this course may also elect ML 8 or ML 10 at the same time. (Course to be given when sufficient number of students elect.)

Three credit hours

ML 9 and 10 Nineteenth Century Literature. From the Romantics to the reaction against Naturalism. Drama, poetry, and the novel. The latter part of the course will treat contemporary writers and tendencies.

Six credit hours

SPANISH

ML 21 and 22 Elementary Spanish. Stress is laid on accurate pronunciation, mastery of elements of grammar, and the acquisition of vocabulary. Oral and written exercises. Reading of easy modern Spanish prose. Composition and conversation. Hills and Ford, Spanish Grammar. DeVitis, Spanish Reader. Crawford, Spanish Composition. Gil Blas.

Six credit hours

ML 23 and 24 Advanced Spanish. Attention will be given to both practical and literary ends. Conversation and composition in Spanish throughout the year. Humphrey's Spanish Prose Composition. During the first half of the year representative plays and novels from the nineteenth century will be read and studied. During the second half either Cervantes' Don Quixote or the dramas of Lope de Vega and Calderon will be studied. Lectures, readings, and reports.

Six credit hours

ITALIAN

ML 41 and 42 Elementary Italian. Study of talian grammar with oral exercises in elementary omposition. Grandgent, Italian Grammar. Easy eading in modern Italian.

Six credit hours

ML 43 and 44 Advanced Italian. Reading of

more difficult Italian prose. Dante, La Divina Commedia.

Six credit hours

GERMAN

ML 61 and 62 First Reading Course. The sole aim of this course is to provide the student with an elementary reading knowledge of the language. Accordingly grammar and pronunciation are taught only in so far as they are necessary for this purpose. Bierwirth, Elements of German; Storm, Immensee; Bernhardt, Deutsche Literaturgeschichte; Heyse, L'Arrabbiata. No credit will be given for less than the full course.

Six credit hours

ML 63 and 64 Second Reading Course. The purpose of this course is to help the student attain ease and accuracy in the reading of more difficult German. Etymology and the formation of words are discussed in so far as these studies contribute to the purpose stated. No credit will be given for less than the full course.

Six credit hours

ML 65 Language Course. (This course is prerequisite to all courses between 71 and 81 inclusive.) Grammar, composition, conversation.

Three credit hours

ML 67 and 68 Reading in Special Subjects. (Prerequisite ML 64.) The purpose of this course is to assist students specializing in other fields to avail themselves of the material published in German in these particular fields. Accordingly, history, chemistry, physics, literature, or whatever other subjects constitute the field of special study of the individual student, will be taken up. This course may be taken in either half-year or in both.

Six credit hours

ML 69 and 70 Individual Assistance in Special Fields. The purpose of this course is to assist students in their individual investigations in other subjects in as far as their material may be in German. Credit will be determined in the case of each student separately according to the amount and nature of his work.

ML 71 and 73 Goethe. (Prerequisite: ML 65.) Conducted mainly in German. (In 1921-22 ML 73 will be omitted; in 1922-23 ML 71 will be omitted; in 1923-24 both ML 71 and 73 will be omitted.)

Each, Three credit hours

ML 72 Lessing. (Prerequisite: ML 65.) (Omitted in 1921-22 and 1922-23.)

Three credit hours

ML 74 Schiller. (Prerequisite: ML 65.) Conducted mainly in German. (Omitted in 1921-22 and 1923-24.)

Three credit hours

ML 76 The German Drama since Goethe. (Prerequisite ML 65.) Conducted mainly in German. (Omitted in 1921-22 and 1923-24.)

Three credit hours

ML 80 German Lyric Poetry since Goethe. (Prerequisite ML 65.) Conducted mainly in German. (Omitted in 1922-23 and 1923-24.)

Three credit hours

ML 81 Middle High German. (Prerequisite ML 65.) Conducted mainly in German. (Omitted in 1921-22 and 1922-23.)

Three credit hours

MUSIC

Miss Wilcox

Mu 1 and 2 Public School Music. Course A

Sight Reading.

This is an elementary course in theory and sight reading. In order to complete this course, the student must be able to sing at sight individually, using the Latin syllables, music suitable for the first four years in the public schools.

Dictation. (Study of tone and rhythm.)

The subject matter of music is presented to the sense of hearing. The student gains the power to think tones and sense rhythms, and learns to recognize and write simple melodic phrases in all keys.

Material and Methods

This course is devoted to the study and demonstration of material and methods for the first four years of music in the schools. Special attention is given to the selection, presentation, and interpretation of rote songs for the primary grades.

Mu 3 Public School Music. Course B

Sight Reading

This course requires singing at sight individually, with and without syllables, music suitable for the seven years in the public schools.

Dictation

This course deals with the problems of tone and rhythm included in the seven years in the public schools.

Material and Methods

The teaching of music in the upper grades is taken up in detail, from the fifth to the eighth, inclusive. The child voice as found in the upper grades is fully discussed in this class.

Mu 4 Practice Teaching

This course is open to students who have completed Mu 3. Each student will be given opportunity for practice teaching under supervision of the instructor.

Mu 5 and 6 Appreciation of Music

This course will include the history of music and current events, and the studying of the lives of the greatest composers in their relation to the development of the world's music. The instruments of the modern symphony orchestra will be studied separately and in various combinations, and a survey will be made of the historical development of the opera and oratorio.

Six credit hours

GLEE CLUB

The Glee Club is open to all students who can qualify. One hour-period a week is devoted to chorus singing and to instruction in the technical and interpretive elements of choral music.

PHYSICAL EDUCATION

MISS WATSON

The purposes of this department are (1) to develop in each student a responsibility for her health, and (2) to provide regulated exercise, posture training, and recreation.

Each student, upon entering College, is given a physical examination by a physician and the director of physical education, in order that individual corrective work may be substituted for the class exercises where necessary.

P 1 and 2 Required of Freshmen, three periods a week through the year. Organized games and athletics

in the fall and spring. Indoor gymnastics in the winter. Lectures on the problems of hygiene in college life.

P 3 and 4 Required of Sophomores, three periods a week through the year. Athletics, basket ball, tennis, etc., in the fall and spring; gymnastics and folk dancing in the winter.

P 5 and 6 Special work, corrective exercises. Required of those who cannot take P 1 and P 3. Periods to be determined by the director of physical education.

P 7 and 8 Dancing. Folk and national dances, dance rhythms, and the fundamentals of classic dancing. Elective for Juniors and Seniors, one period a week from November 1st, through the year.

P 9 and 10 Physical Education and Games. Gymnastics, athletics, and games for schoolroom, playground, etc. Required of two-year students in Education. Three periods a week.

Three credit hours

P 11 and 12 Physical Education and Supervision of Play. (Prerequisite: P 9 and 10). Gymnastics, coaching of games and athletics, theory and practice of play supervision. Required of two-year students in Education. Three periods a week.

PHYSICS

ASSISTANT PROFESSOR REES

General Physics is required in the Freshman year of all students taking the Home Economics course and is open for election to all others. The advanced course in Physics may be elected by students who have taken Ps 1 and 2, or by those who can satisfy the instructor of their fitness to profit by it.

The preliminary course aims to give the student a comprehensive and connected view of the entire field

as well as a working knowledge of its laws in their industrial and household applications. The advanced course, however, purposes the development of the subject at length, in its more important phases. It is designed to give the student a complete and thoro grasp of the fundamental facts and to develop her powers of investigation. The question of teaching Physics will be considered in the last part of the second semester. This course should prove invaluable to the student contemplating the teaching of this subject.

Ps 1 and 2 General Physics. Mechanics, Heat, Light, Sound, Magnetism and Electricity. Lectures and recitations (three hours a week), and laboratory work (one three-hour period a week). Required of Freshmen in Home Economics and open for election to all others. (Laboratory fee, $1.50 a term.)

Six credit hours

Ps 3 and 4 Advanced Course in Physics. A thoro survey of the more important phases of the entire field of Physics in the light of modern developments. Individual investigation and experimentation in such subjects as radioactivity, the X-Ray, etc. Special attention will be paid to the teaching of Physics in High Schools. Lectures (two hours a week); conferences (one hour a week); and laboratory work (one three-hour period a week). Open for election to all who have the necessary preparation. Laboratory fee, $2.00 a term.

Six credit hours

PHYSIOLOGY AND HYGIENE

MISS WATSON

PH 1 and 2 Physiology and Hygiene. The object of this course is to give an understanding and appreciation of the general physiological processes of the human body, a knowledge of what constitutes health,

and the reasons for the laws of hygiene. Some work in anatomy is included. Two lectures, one recitation, two laboratory periods a week through the year. Fee, $1.25 a term.

Six credit hours

PH 4 Hygiene and Sanitation. Personal and educational hygiene, the problems of school and community sanitation which concern the teacher, and the teaching of health principles through the grades. Required of two-year students in Education. Four periods a week.

Three credit hours

GENERAL INFORMATION

REGISTRATION

A reception committee appointed by the President of the Y. W. C. A. will receive students at Residence Hall as they arrive and will act as escorts while they complete their registration.

Registration proceeds as follows:

1. Students receive registration cards from the Secretary to the Dean.

2. The faculty adviser of each school, Arts and Science, Home Economics, or Education, explains the work of that school and assists the student in making out her program for the term.

3. The registration card is then brought to the Business Office where the charge for room and board and all fees are paid.

4. The receipt for the payment of all fees and charges when duly signed by the Assistant to the Business Administrator will secure from the director of hall a key tothe room which has been assigned to that student, the assignament of a seat in the dining-room, and permission to attend classes.

Any student who fails to complete registration on the day specified will be required to pay a fee of two dollars for the first day and one dollar per day thereafter until registration is completed.

FEES AND CHARGES

MATRICULATION

A matriculation fee of five dollars is required of all new students when they apply for admission. No

application is recorded until this fee has been paid. Rooms in the dormitories are assigned to Freshmen in the order in which applications are recorded.

DIPLOMA

A diploma fee of ten dollars is charged each student before her graduation.

TUITION

Tuition is free to all students from the State of Delaware. The tuition for all other students is fifty dollars a term, or one hundred dollars for the year.

NON-RESIDENT STUDENTS

A fee of twenty-five dollars is charged, annually, to all students who do not reside in the dormitory.

SPECIAL STUDENTS

Special students will be charged the regular laboratory fees for each course they enter. In addition they will pay five dollars for the first course and three dollars for each additional course.

INFIRMARY

An infirmary fee of five dollars is charged to every student at the beginning of each term, all or any portion of which not being used is refunded at the close of the college year. The charge for the infirmary, including meals and care, unless the case demands a special nurse, is one dollar per day.

BOARD AND ROOM

The charge for board and room is three hundred and fifteen dollars per year, one hundred and sixty dollars of which is to be paid on or before the day of registration, and one hundred and fifty-five of which is to be paid on or before the registration day of the second term.

Seniors, Juniors, and Sophomores are required to make a deposit of ten dollars before August first to

secure the reservation of a room in the dormitory; the amount to be deducted from the sum paid for board at the time of registration in the fall.

LABORATORY

	First Term	Second Term
Bacteriology		
Biology	$2.50	$2.50
Chemistry		
Home Economics	See pages 57-59 (1919-1920 issue)	
Physics	1.50	1.50
Physiology		

Each student of chemistry or bacteriology is required to purchase a breakage card at a cost of three dollars; this card to be returned to the Business Office for the refund of any portion of this amount which may not have been used.

Student Self-Aid

Students are permitted to do such work as it is practicable to assign to them in the care of the buildings and in connection with the dining-room service, and are paid for this work at a fixed rate.

Library

The Library of the late Doctor George W. Twitmyer, which was bequeathed to the Women's College upon his death, is especially valuable for its works on education. Additions have already been made to this by purchase and by gifts.

The Browsing Room in the dormitory, the gift of two friends of the college, contains an admirable collection of books of general cultural value.

Scholarships

The Delaware Association of College Women offers a scholarship of $100 each year to the young woman who passes the entrance examination given by the Academic Council of the Women's College of Delaware with the highest standing. She must be a resident of the State and physically as well as mentally fit for college life. In 1921 this scholarship will be awarded on the basis of a competitive examination in English, which will be given on June 16, 1921.

Students' Loan Fund

The object of The Students' Loan Fund, which was established in 1915, is to help deserving students to obtain a college education. The fund is being raised by the Delaware State Federation of Women's Clubs and by individuals interested in the college. Students who borrow from this fund pay no interest while they are in college, but after leaving will be required to pay interest.

Scholarship

I Schedules of all students must be approved by the faculty adviser. Changes in schedules after the first week may be made only with the approval of the Academic Council.

II All applications for permission to change from one course to another must be signed by the applicant's parents or guardian and presented to the Scholarship Committee to be approved by the Academic Council before they become effective.

III No student may drop a course without first obtaining permission from her faculty adviser, to be reported to Academic Council at the next meeting.

IV No student may enter in the first term later than October 15, unless she has completed an amount

of work equivalent to the work of the classes she proposes to enter.

V No regular student may carry less than 12 credit hours of work; no regular student may take more than the prescribed number of hours of work unless she has made a grade of "B" or better in at least four-fifths of the work which she undertook during the preceding term and has no conditions.

VI In order to be rated as a member of any class above the Freshman class, a student must have completed at least four-fifths of the work of the preceding year and have no conditions before that year.

VII A student, to remain in college, must pass at least 60 per cent of her total number of credit hours of term work, exclusive of Physical Training. In estimating this minimum requirement, one-half hour or less shall be disregarded; more than one-half hour shall be counted as one hour.

VIII On failure in a subject, a student may take one re-examination only. If a student does not remove a condition in any subject before that subject is again given in class, her grade will be considered E, and the subject must be repeated.

IX A student will be allowed to tutor in one subject only. Tutors are to be recommended by the head of the department.

X The system of grades is as follows:

A—90 or above

B—80 or above

C—70 or above

D—60 or above, and indicates failure redeemable by examination

E—Complete failure, the subject to be repeated in class

Attendance

Each student may be absent without explanation not more than twice from each three-credit-hour course each term. No such absences are to occur directly before or after a holiday or a vacation. Excuses must be presented within three days after the return of the student to classes. A list of unexcused absences shall be posted every second Monday during the college year. The names of students who have been absent from any one class more than twice in the same term without being excused shall be reported at once to the Academic Council.

STUDENTS IN ATTENDANCE DURING THE COLLEGIATE YEAR 1920-1921

Abbreviations: A. & S.—Arts and Science; Ed.—Education; H. E.—Home Economics; T. T.—Teacher Training.

SENIOR CLASS

Alderson, Alphonsa McConnor	A. & S.	Elkton, Md.
Bennett, Ruth Emma	A. & S.	Wilmington
Buckingham, Brita Sarah Owen	H. E.	Newark
Dixon, Madeleine Harriet	A. & S.	Wilmington
Fisher, Helen Chase	A. & S.	Dover
Graffin, Marion	A. & S.	Hanover, Pa.
Groves, Margaret	H. E.	Marshallton
Hanchett, Winifred	A. & S.	Dover
Le Cates, Marie Hearne	A. & S.	Laurel
Pratt, Edna Ellen	A. & S.	Clayton
Ritz, Anna Lois	A. & S.	Newark
Stevens, Katherine	A. & S.	Seaford
Thornley, Lillian Lewis	A. & S.	Smyrna
Vansant, Anna Maria	A. & S.	Galena, Md.
Welcome, Bertha La Tour	A. & S.	Milford
Williams, Mary Cardelle	A. & S.	Crescent City, Fla.

JUNIOR CLASS

Cannon, Eleanor Harris	A. & S.	Wilmington
Ferguson, Alice Mabel	H. E.	New York, N. Y.
Ferguson, Ethel	A. & S.	New York, N. Y.
Finck, Margaret Louise	A. & S.	Wilmington
Ford, Dorothy Mary	A. & S.	Wayne, N. J.
Francis, Sara Louise	A. & S.	Brooklyn, N. Y.
Groves, Helen	A. & S.	Marshallton
Haley, Mildred Morgan	Ed.	Wilmington
Hatfield, Marian	H. E.	Wilmington
Hollingsworth, Hannah M.	Ed.	Fairville, Pa.
Hughes, Nellie Esther	A. & S.	Felton
Jefferis, Mildred Fairlamb	A. & S.	Wilmington
Marshall, Eleanor Hitchens	A. & S.	Lewes

Marvel, Grace Turner	A. & S.	Laurel
Mitchell, Elizabeth Marguerite	H. E.	Millsboro
Moffett, Anna Margaret	A. & S.	Smyrna
Pence, Winifred Ethel	H. E.	Newark
Philips, Augustine Louise	A. & S.	Wilmington
Porter, Vivien Winifred	A. & S.	Washington, D. C.
Rodney, Marian	A. & S.	Laurel
Taylor, Elizabeth Rebecca	A. & S.	Dover
Tebo, Mabel Katharine	Ed.	Dover
Wilcox, Gladys Irene	Ed.	Wellsboro, Pa.
Wooleyhan, Elsie Leonore	A. & S.	Cecilton, Md.

SOPHOMORE CLASS

Alexander, Hazel Dyer	Ed.	West Collingswood, N. J.
Ayerst, Natalie Ruth	A. & S.	Elkton, Md.
Barlow, Elizabeth McCleary	T. T.	Harrington
Blair, Nellie Durham	A. & S.	Wilmington
Bradley, Golda Irene	A. & S.	Federalsburg, Md.
Brown, Virginia Mary	T. T.	Wilmington
Cahall, Anne Penniwell	T. T.	Bridgeville
Clemo, Eleanor Linda	T. T.	Wilmington
Collins, Ilda Kathryn	T. T.	Laurel
Deakyne, Hannah May	H. E.	Smyrna
Deen, Mary Emma	A. & S.	Preston, Md.
Denney, Catharyne Jones	T. T.	Smyrna
Derrickson, Martha Blanche	H. E.	Marshallton
Elters, Viola Bertha	H. E.	Wyoming
Everett, Myra Ellen	T. T.	Felton
Foster, Marguerite Adelaide	H. E.	New York, N. Y.
Frazier, Sara Esther	T. T.	Felton
Gallaher, Marion Cornelia	A. & S.	Newark
Gentieu, Esther Vivian	A. & S.	Penns Grove. N. J.
Gordy, Miriam Elizabeth	T. T.	Frederica
Greene, Edna Elizabeth	A. & S.	Newark
Handy, Mary Noble	A. & S.	Federalsburg, Md.
Horsey, Mildred Kathryn	T. T.	Laurel
Hudson, Ivy May	T. T.	Wyoming
Jaquette, Alice Elizabeth	Ed.	Newark
Johnson, Elsie Margaretta	T. T.	Richardson Park
Jones, Ethel Luella	T. T.	Wilmington
Kelley, Anna Edith	T. T.	Wilmington
King, Mary Ruth	H. E.	Bridgeville
Learned, Margaret	T. T.	Cheswold
Ledenham, Emily Ruth	H. E.	Bridgeville
McAllister, Gladys Esther	H. E.	Newark
McCoy, Frances Romaine	H. E.	Summit Bridge

McNeal, Elizabeth Reese	A. & S.	Newark
Mason, Anna Virginia	T. T.	Magnolia
Massey, Sara Mildred	A. & S.	Price, Md.
Moore, Willma Faye	A. & S.	Milford
Naylor, Beatrice Jane	T. T.	Holly Oak
Pearson, Anna	T. T.	Cheswold
Phillips, Florence Elizabeth	A. & S.	Philadelphia, Pa.
Pool, Letitia Evans	A. & S.	Middletown
Rickards, Anna Madge	T. T.	Ocean View
Roberts, Rose Jeffries	A. & S.	Birmingham, Ala.
Roe, Emma Lucille	A. & S.	Wilmington
Roe, Sara Spencer	A. & S.	Sudlersville, Md.
Rouse, Henrietta Gertrude	A. & S.	Bel Air, Md.
Russell, Ruth Anna	A. & S.	Milford
Shorb, Helen Duval	H. E.	Dover
Simpson, Alice Bernice	T. T.	Harrington
Skewis, Marion Elizabeth	T. T.	Milford
Smith, Mabel Elizabeth	H. E.	Hartly
Spruance, Evelyn Lydia	H. E.	Smyrna
Spruance, Marion Aydon	T. T.	Wilmington
Truax, Marian E.	T. T.	Wilmington
Walker, Elizabeth Jester	A. & S.	Wilmington
Walker, Pauline Elizabeth	T. T.	Kenton
Weihe, Ruth	Ed.	Washington, D. C.
Willis, Lillian Janette	H. E.	Chestertown, Md.
Wolfe, Mildred Hitch	T. T.	Laurel
Woodkeeper, Edna Huggins	T. T.	Taylor's Bridge

FRESHMAN CLASS

Allen, Eva Elizabeth	T. T.	Laurel
Allen, Hazel Louie	A. & S.	Marion, Md.
Barwick, Mary Elizabeth	T. T.	Greenwood
Beck, Anna Louise	H. E.	Delaware City
Bennett, Maria Elizabeth	A. & S.	Milford
Black, Helen Gilmore	A. & S.	Wilmington
Bland, Annie Roberta	T. T.	Newark
Bowen, Marjorie Eloise	H. E.	Lansdowne, Pa.
Bromley, Mabel Nora	T. T.	Felton
Brown, Hilda Lorrayne	A. & S.	Wilmington
Bullock, Helen White	A. & S.	Kelton, Pa.
Burnett, Josephine Margaret	H. E.	Morristown, N. J.
Burns, Marjorie Elizabeth	A. & S.	Wilmington
Burton, Roberta Gertrude	T. T.	Seaford
Carll, Miriam Waithman	Ed.	Camden, N. J.
Carroll, Anna Rebecca	A. & S.	Granogue
Caulk, Margaret Elizabeth	H. E.	Blackbird
Clarke, Florence Elizabeth	A. & S.	Wilmington

Collins, Hazel Sargent	A. & S.	Newark
Cooch, Alma Dunlevy	A. & S.	Newark
Cranston, Edna Everson	H. E.	State Road
Davis, Virginia Golden	H. E.	Denton, Md.
Dayett, Emma Elizabeth	A. & S.	Cooch's Bridge
Edwards, Vera Anita	H. E.	Wilmington
Elliott, Anna Louise	T. T.	Laurel
Fisher, Margaret Vivian	H. E.	Lewes
Garrett, Lois	A. & S.	Hockessin
Givison, Mary Jackson	H. E.	New Castle
Greene, Eveleah Lance	T. T.	Georgetown
Gruwell, Mary	H. E.	Felton
Hatfield, Sara Margaret	H. E.	Georgetown
Hayman, Ruth Caroline	H. E.	Delmar
Hines, Thelma Elizabeth	T. T.	Wilmington
Holliday, Mildred Amelia	A. & S.	New Castle
Holzmueller, Alice Ethel	H. E.	Milford
Howell, Kathryn Miller	A & S.	Camden
Hurley, Louise	H. E.	Seaford
Jackson, Charlotte Louise	A. & S.	Wilmington
Jester, Mildred Elizabeth	T. T.	Harrington
Johnston, Madeline Elvira	T. T.	Marshallton
Jones, Madlin Bowman	A. & S.	Laurel
Kane, Anna Elizabeth	A. & S.	Wilmington
Kelley, Margaret Mary	A. & S.	Wilmington
Knowles, Emma		Greenwood
Le Cates, Dorris Elizabeth	T. T.	Laurel
Leonard, Edith	A. & S.	Philadelphia, Pa.
Lovett, Sara Lydia	A. & S.	Newark
McKinsey, Greta Estelle	T. T.	Wilmington
Macintire, Elizabeth	H. E.	Lewes
Marvel, Nellie Ida	H. E.	Dover
Marvil, Anna Clayton	T. T.	Laurel
Moffitt, Mary Kathryn	A. & S.	Brenford
Moore, Emma Lolita	T. T.	Williamsburg, Md.
Moore, Margaret Elizabeth	H. E.	Bridgeville
Patchell, Anna Mildred	A. & S.	Newark
Pennington, Helen Mae	T. T.	Marshallton
Penrose, Frances Elizabeth	T. T.	Wilmington
Petry, Lucile	A. & S.	Selbyville
Pettibone, Lucile Gertrude	A. & S.	New Milford, Conn.
Price, Lillian Pearl	T. T.	Wyoming
Pryor, Pauline	T. T.	Clayton
Roe, Emily Peale	A. & S.	Sudlersville, Md.
Rothrock, Katherine Regina	A. & S.	New Castle
Rush, Eleanor Anna	A. & S.	Wilmington
Russell, Reba Bates	T. T.	Lewes
Skrivan, Anna	T. T.	Hartly

Smith, Elsie Gladwin	T. T.	Oriole, Md.
Smoak, Nina McIntosh	A. & S.	Crescent City, Fla.
Sweeny, Florence Elizabeth	A. & S.	Trenton, N. J.
Turner, Mary Elizabeth	T. T.	Delmar
Taylor, Elizabeth Jones	T. T.	Stockton, Md.
Van Pelt, Rebecca Wells	T. T.	Smyrna
Vincent, Eugenia Manning	A. & S.	Linkwood, Md.
Vinyard, Eleanor	H. E.	Milford
Walton, Margaret Lyle	A. & S.	Iron Hill, Md.
Wolfenden, Mildred Everett	A. & S.	Cardington, Pa.
Worthington, Frances	H. E.	Wilmington

SPECIAL STUDENTS

Bonnet, Marie Louise	A. & S.	Limoges, France
Pommeret, Genevieve	A. & S.	Rouen, France

ALUMNAE

CLASS OF 1918

Selma Bachrach, Wyneva Apartments,
Wayne & Wyoming Aves., Philadelphia, Pa.
Helen Graham Baylis, 808 West 11th St., Wilmington, Del.
Helen Richmond Brown, 2521 Washington St., Wilmington, Del.
Marion Campbell (Mrs. Clarence E. Keyes), Farmington, Del.
Rebecca Churchman, Farm School, Pa.
Ruth Clendaniel (Mrs. Robert O. Bausman), Newark, Del.
Edna Ubil Coale, Delaware City, Del.
Margaret Truitt Cook, Newark, Del.
Elizabeth Dawson, Elkton, Md.
Alice Downing Evans (Mrs. Armand Durant),
Fort Myer, Washington, D. C.
Mildred Ferguson, Newark, Del.
Catherine Custis Fletcher (Mrs. Robert V. Williamson),
420 South Brook St., Madison, Wis.
Emily Blake Frazer (Mrs. Frank Williams), Elkton, Md.
Anna Elizabeth Gallaher, Newark, Del.
Alta Beatrice Grant, 276 Farrington St., Wollaston, Mass.
Lillian Alberta Groves, 1213 West 5th St., Wilmington, Del.
Olive Fox Heiser, Newark, Del.
Alice Jefferis, 903 Monroe St., Wilmington, Del.
Elizabeth Jones (Mrs. Alec F. J. Crothers), Dover, Del.
Mary Elizabeth Ledenham, Bridgeville, Del.
Edith Augusta McDougle, 328 B St., N. E., Washington, D. C.
Mary Rebecca Moss, Porter, Del.
Catherine Theresa Schunder (Mrs. Horace P. Johnson),
4402 Market St., Wilmington, Del.
Lura Shorb, Dover, Del.
Paulina Mildred Smith (Mrs. Howard Forwood),
1601 Mt. Salem Lane, Wilmington, Del.
Viola Elizabeth Smith, Odessa, Del.
Myrtle Magdalene Steele, Newark, Del.
Hilda Harris Stevens, Clayton, Del.

Anna Carolyn Thompson, 925 West 9th St., Wilmington, Del.
Ada Willim, Dover, Del.
Margaret Wilson, 13th & Washington Sts., Wilmington, Del.

CLASS OF 1919

Olive Marie Carvin, 6 East 14th St., Wilmington, Del.
Mary Clymer Dennison, 1106 Jefferson St., Wilmington, Del.
Mabel Augusta Dobson, Millsboro, Del.
Lilly Ferguson, Cecilton, Md.
Elisabeth Wiltbank Houston, Georgetown, Del.
Elizabeth Mae Jones, Georgetown, Del.
Mary Margaret Keenan, 2324 Lancaster Ave., Wilmington, Del.
Catherine McGraw, 120 Anderson Place, Buffalo, N. Y.
Helen Aleta Mackey, West Grove, Pa.
Mary Jane Mason, Laurel, Del.
Emilie Elizabeth Mundy, R. F. D. No. 4, Kennett Square, Pa.
Madge Nickerson, Newark, Del.
Margaret Grace Rono, 816 Lombard St., Wilmington, Del.
Anna Drew Scott, Milford, Del.
Gladys Whitehead Walton, Iron Hill, Md.
Elizabeth Wright (Mrs. Benjamin Proud), Tarrytown, N. Y.
Mary Jennie Wright, Preston, Md.

CLASS OF 1920

Bancroft, Helen Baylis (Mrs. Alfred B. Thomas), 920 South St. Bernard St., Philadelphia, Pa.
Beebe, Anna Elizabeth, Lewes, Del.
Bishop, Helen Grace, Freehold, N. J.
Butz, Lillian Grace, Dover, Del.
Campbell, Nellie May, Marshallton, Del.
Davis, Mary Virginia, Cecilton, Md.
Harrington, Virginia McCleavy, Harrington, Del.
Hastings, Martha Bernice, Laurel, Del.
Howell, Elizabeth Shepard (Mrs. Milburn Godwin), Dover, Del.
Messick, Lena Ruth, Bridgeville, Del.
Millikin, Helen Louise, 419 North Broome St., Wilmington, Del.
Nelson, Louise Anna, Harrington, Del.
Roop, Alice Lincoln, 1025 West 7th St., Wilmington, Del.

77

2

BULLETIN

OF THE

NIVERSITY OF DELAWARE

LUME XVII NEW SERIES NUMBER 2

MARCH, 1922

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ANNUAL CATALOGUE

1921-1922

PUBLISHED QUARTERLY BY THE UNIVERSITY

NEWARK, DELAWARE

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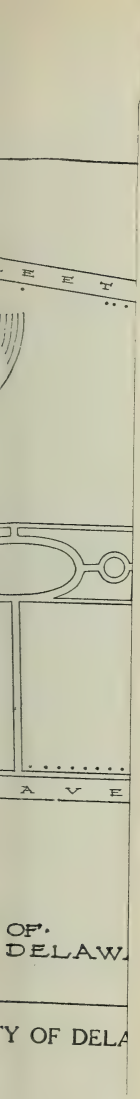

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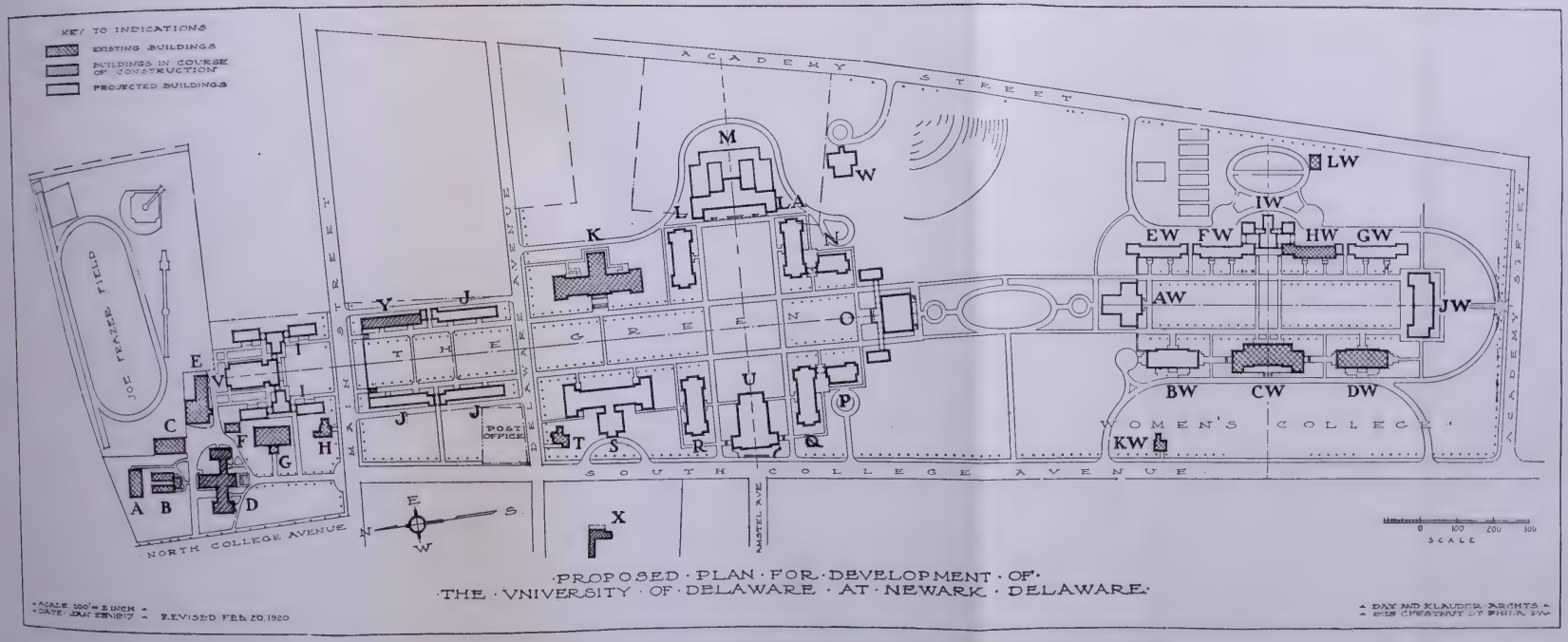

PROPOSED GROUP PLAN FOR THE DEVELOPMENT OF THE UNIVERSITY OF DELAWARE

MEN'S COLLEGE

A.	Old Heating Plant.	J-J-J.	Dormitories.	R.	Social Science.
B.	Greenhouses.	K.	Wolf Hall—Agriculture.	S.	Liberal Arts.
C.	Gymnasium.	L.	Physics.	T.	Infirmary.
D.	Old College.	L-A.	Recitation Building.	U.	Auditorium.
E.	Mechanical Hall.	M.	Engineering Building.	V.	Proposed Gymnasium.
F.	Board of Health Laboratory.	N.	Unassigned.	W.	New Power Plant.
G.	Recitation Hall.	O.	Library.	X.	President's Home.
H.	Purnell House.	P.	Administration Building.	Y.	Harter Hall.
I-I.	Fraternity House Group.	Q.	English.		

WOMEN'S COLLEGE

A-W.	Y. W. C. A.	H-W.	Sussex Hall.
B-W.	College Hall.	I-W.	Common and Social Hall.
C-W.	Science Hall.	J-W.	Unassigned.
D-W.	Residence Hall.	K-W.	Practice Home.
E-W. } F-W. } G-W.	Dormitories.	L-W.	Old Heating Plant.

CATALOGUE

OF THE

UNIVERSITY OF DELAWARE

1921-1922

WITH

ANNOUNCEMENTS FOR 1922-1923

PUBLISHED BY THE UNIVERSITY

NEWARK, DELAWARE

1922

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CALENDAR

1922		
January 3	Tuesday	Christmas recess ends, 1.00 p. m.
January 27-February 4		Mid-Year Examinations
February 6		Second term begins, 8.00 a. m.
February 18	Saturday	Meeting of the Trustees, 11.15 a. m.
April 13	Thursday	Easter recess begins, 11.50 a. m.
April 20	Thursday	Easter recess ends, 1.00 p. m.
June 2-9		Final Examinations
June 5	Monday	Summer Term, Rehabilitation Division begins, 1.00 p. m.
June 10	Saturday	Meeting of the Trustees, 11.15 a. m.
		Class Day—Alumni Day—Alumnae Day
June 11	Sunday	Baccalaureate Sermon, 11.00 a. m.
June 12	Monday	Commencement Day
June 14,15		Examinations for Admission
June 26	Monday	Summer School for Teachers opens.
June 30-July 5		Recess, Rehabilitation Division
August 4	Friday	Summer School for Teachers closes.
September 19, 20		Examinations for Admission
September 18, 19, 20		Re-examinations
September 21	Thursday	Registration Day for Freshmen and Sophomores
September 22	Friday	Registration Day for Juniors and Seniors
		Convocation Exercises, 3.00 p. m.
October 2	Monday	Fall Term, Rehabilitation Division begins, 1.00 p. m.
November 11	Saturday	Armistice Day—a Holiday
November 22	Wednesday	Thanksgiving recess begins, 11.50 a. m.
November 27	Monday	Thanksgiving recess ends, 1.00 p. m.
November 28	Tuesday	Meeting of the Trustees, 11.15 a. m.
December 23	Saturday	Christmas recess begins, 10.50 a. m.
1923		
January 3	Wednesday	Christmas recess ends, 1.00 p. m.
January 26-February 3		Mid-Year Examinations
February 5	Monday	Second term begins, 8.00 a. m.
February 17	Saturday	Meeting of the Trustees, 11.15 a. m.
March 29	Thursday	Easter recess begins, 11.50 a. m.
April 5	Thursday	Easter recess ends, 1.00 p. m.
June 1-8		Final Examinations
June 9	Saturday	Meeting of the Trustees, 11.15 a. m.
		Class Day—Alumni Day—Alumnae Day
June 10	Sunday	Baccalaureate Sermon, 11.00 a. m.
June 11	Monday	Commencement Day
June 13, 14		Examinations for Admission

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THE UNIVERSITY OF DELAWARE

The University of Delaware is situated at Newark, a town of 2600 inhabitants, about half way between Philadelphia and Baltimore on the main lines of the Pennsylvania and Baltimore and Ohio Railroads running from New York to Washington. The climate is equable; the surrounding country is attractive; and the town itself has all modern improvements, including an excellent supply of artesian well water and a complete sewerage system.

Foundation

Delaware College was chartered as a private college by an Act of the Delaware Legislature in 1833, and it was first opened to students in May, 1834. With the college was merged the old Newark Academy, a preparatory school founded in 1767. This merger continued until 1869. As a result of a succession of misfortunes the college was closed from 1859 to 1870. It was reopened in 1870, having meanwhile been designated by an Act of the Delaware Legislature as beneficiary under the Act of Congress known as the "Morrill Bill," which apportioned to each of the several states large areas of public lands to form the basis of endowments for colleges which must include in their curriculum the teaching of Agriculture, the Mechanic Arts, and Military Tactics. The college was thus under combined private and State ownership until 1913, when it came into the sole possession of the State. The Women's College, the college for women affiliated with Delaware College, was established by the

State in 1914. In 1921, by an Act of the Legislature, Delaware College and the Women's College were united under the name of University of Delaware. The Board of Trustees consists of 28 members, together with the Governor of the State, the President of the University, the Master of the State Grange, and the President of the Board of Education, all of whom are members ex officio.

Grounds and Buildings

The grounds of the University comprise a tract of 88 acres in the heart of Newark, and a farm of 217 acres, used for purposes of instruction and experimentation. As the result of the purchase for the University in 1915 by Mr. Pierre S. du Pont of the large tract of land lying between the original campus of Delaware College and the campus of the Women's College, the University now has ample space for future development.

DELAWARE COLLEGE

Old College, a beautiful example of colonial architecture; the remodeled original building of Delaware College with its several additions. In the remodeling of this building in 1917 the brick shell of the old structure was retained, the interior being entirely rebuilt out of fireproof material. This building is the social centre of student life. It contains the Commons, the Lounge, rooms for Student Meetings and Organizations, etc. The Faculty Club is also located here, its room in the East Wing having been attractively furnished through the generosity of H. Rodney Sharp, of the class of 1900.

Recitation Hall, a three-story brick building erected by the State in 1892 and used, as its name implies, mainly for lecture and recitation rooms. The Administration Offices are at present located in this building.

Mechanical Hall, a two-story brick building erected by the State in 1904, and containing now the Offices, lecture rooms, drawing rooms, and shops of the Division of Mechanical Engineering.

The Gymnasium, a one-story brick building erected by the State in 1905, and containing in addition to the main exercise floor, showers, swimming pool, and the office of the Physical Director.

Purnell Hall, a small house, originally the home of a branch of the Evans family; later used successively as a Chapter House for the Kappa Alpha Fraternity, as a home for the Y. M. C. A., and as a General Library, and now containing the offices of the staff of the Department of English.

Elliott Hall, a stone-and-brick structure purchased from the Elliott family, and now used largely for residence apartments for members of the teaching staff.

The Library, a two-story brick building providing a temporary home for the General Library.

Harter Hall, the first of the new dormitories which are to be erected on that part of the campus lying between Main Street and Delaware Avenue. This dormitory, erected in 1917, was designed to accommodate 59 students. It was named in honor of George A. Harter, President of the College from 1896-1914.

Temporary Engineering Buildings, three one-story frame structures erected in 1920 to provide temporary housing for the Divisions of Civil and of Electrical Engineering.

Wolf Hall, a magnificent building erected in 1917 for the School of Agriculture, and named in honor of Theodore R. Wolf, Professor of Chemistry from 1871-1907. Several of the Departments of Pure Science are also housed in this building. Wolf Hall, Harter Hall, and Old College represent architecturally and physic-

ally the beginning of the University of Delaware as projected by the Alumni, and thus far realized largely through the generosity of a citizen of Delaware, Pierre S. du Pont.

The Infirmary, a two-story brick dwelling converted by the Trustees in 1916 into a hospital for the students of the college. It is under the direct superintendence of a trained nurse.

THE WOMEN'S COLLEGE

Science Hall, a three-story and basement building, was erected in 1914 as the first of the two buildings to be constructed on the plot of nineteen acres purchased by the State in 1913 for the location of the Women's College, the appropriation for land, buildings, and initial equipment being $125,000. Here most of the recitation rooms, laboratories, and offices of the college are located.

Residence Hall, which was erected at the same time as Science Hall, corresponds with it in modern colonial architecture. It was intended to provide for fifty students, but later changes increased its capacity as a dormitory to sixty-three while the enlargement of kitchen and dining room, made possible by the gift of the Delaware School Auxiliary, increased the capacity of the dining hall to two hundred persons.

Sussex Hall, provision for the erection of which was made by the State Legislature in 1917 by the appropriation of $125,000, was opened in 1918. It is constructed of colonial brick and corresponds in design with the general plan of colonial architecture which has been adopted for the buildings of the University. It is a three-story fire proof building and accommodates sixty-seven persons.

Two Temporary Dormitories each to house twenty-two persons were built and loaned to the college in

September 1920 by the Delaware School Auxiliary Association. They have since been made a gift to the college.

The Practice House of the Home Economics Department is a dwelling house near Science Hall on the north acquired by purchase by means of funds given to Delaware College by Mr. Pierre S. du Pont in 1915 and granted for use as a practice house in 1919.

The Model One-Room School Building located east of Wolf Hall on Academy Street was built by the Delaware School Auxiliary in 1921. It is used by the Department of Education in co-operation with the Board of Education of Newark for the Opportunity Class, a group of exceptional children. This classroom serves as a laboratory for the students of education and child psychology.

Faculty Residences. The University also owns nine brick or frame dwelling houses on the main campus, the president's home on College Avenue, and six brick dwellings on Delaware Avenue, all of which are occupied by the families of members of the Faculty.

TRUSTEES

Ex-Officio

The Governor, William D. Denney, Dover
The President of the State Board of Education,
T. R. Brown, Wyoming
The Master of the State Grange, Jacob H. Rosa, Milford
The President of the University, Walter Hullihen

H. G. M. Kollock, M. D., Newark 1882
J. Harvey Whiteman, Esq., Wilmington 1892
Charles B. Evans, Esq., Newark 1894
William T. Lynam, Esq., Wilmington 1897
Charles S. Conwell, Camden 1897
Daniel W. Corbit, Odessa 1899
L. Heisler Ball, M. D., Marshallton 1900
W. Watson Harrington, Esq., Dover 1900
Samuel H. Messick, Bridgeville 1902
James E. Dutton, Seaford 1904
John Biggs, Esq., Wilmington 1905
Samuel H. Derby, Woodside 1905
Thomas Davis, Esq., Wilmington 1908
Samuel J. Wright, Newark 1910
Henry Ridgely, Esq., Dover 1911
Charles M. Curtis, Esq., Wilmington 1911
Everett C. Johnson, Wilmington 1911
Henry B. Thompson, Greenville 1912
Eben B. Frazer, Newark 1913
H. Rodney Sharp, Wilmington 1915
W. H. Heald, Esq., Wilmington 1915
Edward A. Evans, Cheswold 1916
Charles R. Miller, Wilmington 1917
H. F. du Pont, Winterthur 1918
Harry Cannon, Bridgeville 1918
Henry P. Scott, Delaware City 1920
Warren C. Newton, Bridgeville 1922
Frank L. Grier, M. D., Milford 1922

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Mrs. William P. Bancroft, Wilmington 1914
Mrs. Charles B. Evans, Newark 1914
Mrs. Frank Bancroft, Camden 1920
Mrs. Samuel H. Messick, Bridgeville 1920

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GEORGE LEE SCHUSTER, S. M. *Professor of Agronomy*

*Deceased, November 5, 1921.

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SYLVESTER RANDALL DERBY
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Assistant Professor of Military Science and Tactics

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LEO BLUMBERG, E. E. *Assistant Professor of Engineering*

JOHN LINTON COYLE *Instructor in Shop Work*

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†Transferred, Jan. 9, 1922.

Rachel Taylor — *Director of Fine and Industrial Arts*
Dora Wilcox — *Instructor in Music*
Miriam Ellen Null, A. B. — *Instructor in Home Economics*
Agnes Snyder — *Instructor in Education*
Ernest Canfield VanKeuren, A. B. — *Instructor in English*
William Francis Lindell, S. B. — *Instructor in Engineering*
Elizabeth Kelly, A. M. — *Instructor in Home Economics*
Joy Harold Clark, S. B. — *Instructor in Horticulture*
Arthur Edward Tomhave, S. B. — *Instructor in Animal Husbandry*
Alexander Blair, Jr., A. B. — *Instructor in English and History*
Dorothy Aileen Calef, S. M. — *Instructor in Biology*
Marion Chase Parkhurst — *Instructor in Physical Education*
Elmer Reeve Hitchner, S. M. — *Instructor in Biology*
Ada Willim, S. B. — *Assistant in Chemistry*
Mary Alexandra Ospina — *Teaching Fellow in French and Spanish*
Anne Ritz, A. B. — *Teaching Fellow in Art*

STANDING COMMITTEES OF THE UNIVERSITY FACULTY

Admission: Professor Dutton, *Chairman;* Dean McCue, Miss Snyder, and Miss Null.

Extension: Professor Wilkinson, *Chairman*; Professor Vaughn, Professor Drake, and Professor Thoroughgood.

Graduate Studies and Research: Dean E. L. Smith, *Chairman;* Professor Sypherd, Professor Manns, Professor Dutton, Professor Drake, and the Deans, ex officio.

Publicity: Assistant Professor Kirkbride, *Chairman*; Professor Conover, Assistant Professor Runk, Miss Taylor, and Miss Parkhurst.

Public and Social Functions: Assistant Professor Rankin, Major Row, Assistant Professor Rees, Miss Kelly, and Miss Calef.

Schedule: Associate Professor Foster, *Chairman;* Professor Preston, and Assistant Professor Rees.

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Secretary of the Faculty of the Women's College, Quaesita Drake
Acting Registrar of Delaware College, Dean E. L. Smith
Secretary to the President, Helen L. Steele
Secretary to the Dean of Delaware College, Tevis Miller
Secretary to the Dean of the Women's College, Gertrude Sturges

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Business Administration, Arthur G. Wilkinson
Assistant to the Business Administrator, Alberta Heiser
Assistant to the Business Administrator, Edwina Long
Secretary to the Business Administrator, Dora Law
Superintendent of Grounds and Buildings, D. Lee Rose
Director of the Commons, Natalie Betts
Assistant to the Director of the Commons, Teresa Matthews
Matron of the Women's College, Sarah Churchman
Director of the Halls, Women's College, Mrs. Emma Wilson

LIBRARIES

Librarian, Dorothy L. Hawkins
*Assistant in Library**, Eleanor E. Todd
Assistant in Library, Mabel C. Armstrong
Assistant in Library, Ethel Campbell
Librarian of the Women's College, Gladys F. Pratt

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M. O. Pence, S. B. — *State Leader of County Agents*
Alexander D. Cobb, S. B. — *State Leader Boys' and Girls' Clubs*
Kathryn E. Woods — *Home Demonstration Agent at Large*
James F. Adams, Ph. D. — *Specialist in Plant Diseases*
Florence Colbert — *Secretary*
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Russell E. Wilson, S. B. — *County Agricultural Agent, Kent County*
M. C. Vaughn, S. B. — *County Agricultural Agent, Sussex County*
Agnes P. Medill — *County Club Agent, New Castle County*
Helen L. Comstock, S. B. — *County Club Agent, Kent County*
Dorothy Emerson — *County Club Agent, Sussex County*

*On leave since November 1.

EXPERIMENT STATION STAFF

C. A. McCue, S. B.	*Director and Horticulturist*
Thomas F. Manns, Ph. D.	*Plant Pathologist and Soil Bacteriologist*
E. M. R. Lamkey, Ph. D.	*Plant Physiologist*
T. A. Baker, S. B.	*Animal Husbandryman*
D. C. Palmer, S. M., D. V. M.	*Consulting Veterinarian*
George L. Schuster, S. M.	*Agronomist*
Lester W. Tarr, S. B.	*Chemist*
Louis R. Detjen, S. B., S. M .	*Associate Horticulturist*
James F. Adams, Ph. D	*Associate Plant Pathologist*
G. V. C. Houghland	*Assistant Agronomist*
Spencer C. Noble, S. B.,	*Assistant Chemist*
. Harold Clark, S. B.	*Assistant Horticulturist*
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Raymond Melville Upton, S. B.	*Director of Rehabilitation*
harles Raymond Runk, S. B.	*Farm Economics*
laude E. Phillips, S. B.	*Soils*
oland Handy, S. B.	*Crops*
. E. Tomhave, S. B.	*Instructor Foreman*
. M. Koon, S. B.	*Animal Husbandry*
. E. Schaffle, S. B.	*Horticulture*
hineas Morris, Ph. B.	*Poultry*
erman G. Dimmick, A. B.	*Academic Department*
ary L. Powers	*Academic Department*
illiam S. Lilly	*Academic Department*
inifred S. Bach, A. B.	*Physical Education*
	Secretary

SCOPE OF UNIVERSITY ACTIVITIES

The University of Delaware embraces the following departments of activity:

DELAWARE COLLEGE

The School of Arts and Science
The School of Agriculture
The School of Engineering

THE WOMEN'S COLLEGE

The School of Arts and Science
The School of Education
The School of Home Economics

AGRICULTURAL EXTENSION
THE SUMMER SCHOOL
ACADEMIC EXTENSION

THE AGRICULTURAL EXPERIMENT STATION

THE REHABILITATION DIVISION

DELAWARE COLLEGE

FACULTY

Delaware College

WALTER HULLIHEN, Ph. D. *President*

GEORGE ABRAM HARTER, Ph. D.
Professor of Mathematics and Physics

ELISHA CONOVER, A. M.
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Professor of Electrical Engineering

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Professor of Military Science and Tactics

RALPH HARRIS, S. B. *Professor of Business Administration*

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*Deceased, November 5, 1921.

WILSON LLOYD BEVAN, Ph. D. *Professor of European History*
LOUIS WILLIAM FLACCUS, Ph. D. *Acting Professor of Philosophy*
RAYMOND MELVILLE UPTON, S. B.
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†STANLEY MARSHALL PROUTY, 1st Lieut., Inf., U. S. A.
Assistant Professor of Military Science and Tactics
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JOHN LINTON COYLE *Instructor in Shop Work*
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JOY HAROLD CLARK, S. B. *Instructor in Horticulture*
ARTHUR EDWARD TOMHAVE, S. B.
Instructor in Animal Husbandry
ALEXANDER BLAIR, JR., A. B. *Instructor in English and History*
ELMER REEVE HITCHNER, S. M. *Instructor in Biology*

†Transferred, January 9, 1922.

STANDING COMMITTEES

ADMISSION: Professor Dutton, *Chairman;* Dean McCue, Acting Dean M. Van G. Smith, and Assistant Professor Brinton.

ADVANCED STANDING: Dean Smith, *Chairman;* Dean McCue, Acting Dean M. V. G. Smith.

ATHLETICS: Faculty Representatives on the Athletic Council—Professor Sypherd, *President;* Professor Preston, *Vice President;* Director of Athletics, Mr. Shipley, *Manager.*

COLLEGE HOUR: Professor Wilkinson, *Chairman;* Professor Vaughn.

LIBRARY: Professor Sypherd, *Chairman;* Professor Harter, Professor Penny, Professor Houghton, Professor Palmer.

PRIZES AND SCHOLARSHIPS: Professor Conover, *Chairman;* Professor Sypherd, Professor Preston, Professor Schuster.

PUBLIC AND SOCIAL FUNCTIONS: Assistant Professor Rankin, *Chairman;* Major Row, Assistant Professor Rees, Professor Heim.

PUBLICATIONS: Professor Sypherd, *Chairman;* Dean McCue, Associate Professor Foster, Assistant Professor Saleski.

SCHOLARSHIP AND DISCIPLINE: Dean Smith, *Chairman;* Professor Vaughn, Acting Dean M. V. G. Smith, Professor Dutton, Dean McCue, Professor Thoroughgood.

STUDENT SCHEDULES: Arts and Science—Dean Smith, *Chairman;* Professor Conover, Professor Vaughn. Agriculture—Dean McCue, *Chairman;* Professor Baker, Professor Schuster. Engineering—Acting Dean M. V. G. Smith, *Chairman;* Professor Koerber, Professor Thoroughgood, Professor Penny.

STUDENT SELF-HELP: Professor Hancock, *Chairman;* Professor Harris, Associate Professor Detjen.

The Standing Committees of the Faculty of the Women's College will be found in the Women's College section of this catalogue.

For University Faculty Committees, see page 17.

REQUIREMENTS FOR ADMISSION

GENERAL REGULATIONS

Candidates for admission to the Freshman class must be at least 16 years of age and of good moral character. They must (1) be graduates of standard four-year high or preparatory schools, or (2) have spent four full years as students in such schools, and in addition sustain examinations at the University in all subjects which they present for entrance. The examinations are given on the days prescribed in the calendar of the University. All candidates, whether they are graduates of high schools or not, are required to present 15 units as entrance credits.

Students should enter at the beginning of the first term. Applicants will not be permitted to enter the University after the beginning of the first term, unless they have completed an amount of work equivalent to the work already done by the classes which they wish to enter.

All applications and credentials should be sent to the Committee on Admission before August 1. Those not received by this time will not be acted upon by the Committee until after September 1.

The requirements for admission to the Women's College are given in the Women's College section of this catalogue.

SPECIFIC REQUIREMENTS

Fifteen units are required for entrance.

A unit, according to a statement formulated by the National Conference Committee on Standards of Colleges and Secondary Schools, represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A four-year secondary school curriculum should be re-

garded as representing not more than sixteen units of work.

The foregoing statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute periods or their equivalent.

REQUIRED UNITS FOR ADMISSION TO SCHOOLS OF DELAWARE COLLEGE

	Arts and Science Units	Engineering Units	Agriculture Units
English* (4 years)	3	3	3
Mathematics—			
Algebra	1	1½	1
Plane Geometry	1	1	1
Solid Geometry†	..	½	..
Foreign Language‡	2	2	2
History	1	1	1
Science	1	1	1
	9	10	9
Elective	6	5	6
Totals	15	15	15

*Applicants for admission must present four years of English. If they have pursued this study five full periods a week throughout the four years of their high school course, they may receive four units of credit.

†Applicants for admission to the School of Engineering who have not completed Solid Geometry must take it in college without credit.

‡Latin, Greek, French, German, Spanish. All applicants must present two units in one foreign language or be conditioned and required to take one year of foreign language in college without credit. This requirement may *not* be satisfied by the presentation of one unit in one language and one unit in another language.

ELECTIVE UNITS THAT MAY BE OFFERED FOR ADMISSION

Elective units sufficient to bring the total number up to 15 must be offered from the following list:

Foreign Languages	
Greek	2 units
Latin	2 units
French	2 units
German	2 units
Spanish	2 units
History	
Ancient	1 unit
Medieval and Modern	1 unit or 2 units
English	1 unit
American	½ or 1 unit
Civics	½ unit
Science	
Botany	½ or 1 unit
Chemistry (See Note 6)	½ or 1 unit
Physics (See Note 6)	½ or 1 unit
Physical Geography	½ or 1 unit
Physiology	½ unit
Zoology	½ or 1 unit
Biology	½ or 1 unit
General Science	1 unit
Vocational Subjects	See Note 5
Drawing	1 unit or 2 units

Note 1. All applicants are required to present a minimum of 15 units; and no condition is permitted in any subject except as provided for Foreign Language in note on page 27. Beginning with 1924, no applicant will be admitted with any conditions.

Note 2. Candidates for the degree of Bachelor of Arts must offer four years of Ancient Language (4 units of Latin, or 2 units of Latin and 2 units of

Greek) for entrance, or complete in college what they lack of this requirement.

Note 3. All candidates for admission are examined in English Composition in order to test their ability to do the required English of the Freshman year. Examinations are held in June and September. Candidates are advised to take the examinations in June. Those who fail will have the opportunity of working privately on the subject during the summer or of taking a course in English in the six weeks' Summer Session.

Note 4. Applicants who present Modern Foreign Language for entrance and expect to continue the subject will be required to take a test given by the Modern Language department in order that they may be placed in the class in which they are qualified to do satisfactory work. This test will not affect the value of their credits in the subject in so far as entrance is concerned. Conditions in Foreign Language must be made up by means of additional work in college.

Note 5. Elective units in vocational subjects to the number of three will be accepted from graduates of the four-year Smith-Hughes High School course. Graduates from this course may also offer for entrance two units from the list on page 28 in place of the regular requirements in Foreign Language.

Note 6. Chemistry and Physics should include laboratory work and experiments by the pupil in accordance with national standards. Where such laboratory and experiment work has not been done, only ½ unit of entrance credit will be given for the year's work in the subject.

DETAILED EXPLANATION OF THE REQUIREMENTS FOR ADMISSION

The following detailed explanation of the requirements for admission is based on Bulletin 96, published by the College Entrance Examination Board. It is intended as a guide to those high school teachers who wish to give the best preparation possible to pupils who expect to go to college, and also as a means by which they may be aided in their efforts to bring their own courses to the highest possible point of effectiveness. In place of the textbooks named in this explanation, other textbooks covering equivalent ground may be substituted.

English

Candidates should be prepared in accordance with the following requirements:*

(1) Habits of correct, clear, and truthful expression. This part of the requirement calls for a carefully graded course in oral and written composition, and for instruction in the practical essentials of grammar, a study which ordinarily should be reviewed in the secondary school. In all written work constant attention should be paid to spelling, punctuation, and good usage in general as distinguished from current errors. In all oral work there should be constant insistence upon the elimination of such elementary errors as personal speech-defects, foreign accent, and obscure enunciation.

(2) Ability to read with intelligence and appreciation works of moderate difficulty; familiarity with a few masterpieces. This part of the requirement calls for a carefully graded course in literature. Two lists of books are provided from which a specified number of units must be chosen for reading and study. The first, designated as the A List, contains selections appropriate for the earlier years in the secondary school. These should be carefully read, in some cases studied, with a measure of thoroughness appropriate for immature minds. The second, designated as the B List, contains selections for closer study warranted in the later years. The progressive course formed from the two lists should be supplemented, at least by home reading on the part of the pupil and by classroom reading on the part of pupils and instructor. It should be kept constantly in mind that the main purpose is to

* These requirements represent, with slight changes in phrasing, the "Requirements under the Restrictive Plan" for 1923, 1924, and 1925 as adopted by the National Conference on Uniform Entrance Requirements. The entrance examinations in 1922 will be based on the old plan as outlined in the catalogue for 1919-1920.

cultivate a fondness for good literature and to encourage the habit of reading with discrimination.

The A List

From each group two selections are to be made, except that for any book in Group V a book from any other may be substituted.

Group I. Dickens: A Tale of Two Cities; George Eliot: Silas Marner; Scott: Quentin Durward; Stevenson: Treasure Island or Kidnapped; Hawthorne: The House of the Seven Gables.

Group II. Shakspere: Merchant of Venice; Julius Cæsar; King Henry V; As You Like It.

Group III. Scott:The Lady of the Lake; Coleridge: The Ancient Mariner; and Arnold: Sohrab and Rustum. A collection of representative verse, narrative and lyric. Tennyson: Idylls of the King (any four); The Aeneid or The Odyssey in a translation of recognized excellence, with the omission, if desired, of Books I—V, XV, and XVI of The Odyssey.

Group IV. The Old Testament (the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther); Irving: The Sketch Book (about 175 pages); Addison and Steele: The Sir Roger de Coverly Papers; Macaulay: Lord Clive; Parkman: The Oregon Trail; Franklin: Autobiography.

Group V. A modern novel; a collection of short stories about 150 pages); a collection of contemporary verse (about 50 pages); a collection of prose writings on matters of current interest (about 150 pages); two modern plays. All selections from this group should be works of recognized excellence.

The B List

One selection is to be made from each group.

Group I. Shakspere: Macbeth, Hamlet.

Group II. Milton: L'Allegro, Il Penseroso, and either Comus or Lycidas; Browning: Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Herve Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus," Instans Tyrannus, One Word More.

Group III. Macaulay: Life of Johnson; Carlyle: Essay on Burns, with a brief selection from Burns' Poems; Arnold: Wordsworth, with a brief selection from Wordsworth's Poems.

Group IV. Burke: Speech on Conciliation with America; a collection of orations, to include at least Washington's Fare-

well Address, Webster's First Bunker Hill Oration, and Lincoln's Gettysburg Address.

EXAMINATION

The examination will test powers of correct, clear, truthful expression, the faithfulness with which the candidate has read and studied the books in the A List and the B List. The candidate will write one or more compositions several paragraphs in length. The subjects may be suggested in part by the books in the A List, but a sufficient number from other sources will make it possible for the candidate to draw upon his own experience and ideas. He will not be expected to compose at a more rapid rate than three hundred and fifty words an hour, but his work must be free from common errors in grammar, idiom, spelling, and punctuation, and should show that he understands the principles of unity and coherence. In addition, questions may be asked on the practical essentials of grammar, such as the construction of words and the relation of various parts of a sentence to another. The candidate will be expected to have an intimate knowledge of the books in the B List.

He will be required to submit a statement certified by his principal specifying what books he has read during his secondary school course, and indicating the quality and character of his spoken English.

History and Civil Government

In each of the subjects except Civil Government, the following preparation is required:

1. Historical instruction in a high school or academy for one year to the extent specified in the definition of the Unit of Admission Requirements.

2. The study of an accurate historical textbook, in which not less than 500 pages of text are devoted to the particular subject.

3. Collateral reading of appropriate selections, in books of a less elementary nature, amounting to at least 500 pages.

4. The ability to compare historical characters, periods and events, and in general the power to combine in orderly fashion the results of reading, and to exercise judgment as well as memory.

5. The ability to locate places historically important and to describe territorial changes and other historical movements on an outline map, acquired from the study of physical as well as political geography with the aid of map work.

Ancient History

One Unit

This course should devote one-half of the year to the study of the history of the ancient Orient and of Greece as far as the death of Alexander and the break-up of his empire, with the study of Western Hellas to the death of Timoleon. The second half-year should be devoted to the study of the history of Rome as far as the death of Charlemagne. During this half-year time should be found for the study of the Hellenistic Period of Greek history and the merging of the story of Greece with the story of Rome.

Medieval and Modern History

One Unit

The broad plan of this course should be to devote one-quarter of the year's work to the period prior to about 1300 A. D., closing with the death of Pope Boniface VIII; the second quarter should carry forward to about 1660, closing with the readjustments in the treaties of Westphalia and of the Pyrenees; the third quarter should close with the Congress of Vienna in 1815; and the fourth quarter should be adjusted so as to give the last half of the time to events since 1878, with the purpose of explaining clearly the causes and the issues of the war of 1914.

Modern History

One Unit

After a brief survey of the international and colonial development since the age of discovery, the course should begin with a cross-section of the governmental, social, and cultural conditions in Europe about 1660 A. D. The absolute monarchy of Louis XIV, the parliamentary government of England, the enlightened despotism of Frederick the Great, and the republican government of Revolutionary France and the imperialism of Napoleon should be studied as types of government in the transition from medieval feudalism to present-day democracy. Attention should be given to the growth of national states and to the leading international and colonial problems since 1660 which culminate in the British Empire with its self-governing dominions, the partition of Africa, the awakening of the Far East, and the great international rivalries of the present generation. Emphasis should be laid upon the Industrial Revolution—its political and social aspects—and some attention should be given to the leading features of the internal history of England, France, and Germany. The study of the last century should include some account of the great material changes, important inventions, and intellectual, social, and humanitarian movements.

English History

One Unit

The division of the work between the two half years should be made at about 1660. During the first half-year, the periods of the early Plantagenets (Henry II and Edward I), of the Tudors, and of the early Stuarts should receive emphasis. In the second half-year, starting with the Restoration, attention should first be given to the continued struggle between Crown and Parliament, culminating in the establishment of responsible government. The great wars with France, the imperial policy of England, and the great revolution in agriculture, industry, and transportation, should also be carefully studied, as well as the economic, social, and political life. In general, it is desirable to emphasize the important epochs and the greater movements rather than to give each reign equal stress.

American History*

One Unit

The course in American history should be so arranged that the work of the first half-year will include the administration of John Quincy Adams, whereas that of the second half-year will include events of recent occurrence. In the work of the first half-year considerable more time should be spent on the period from 1763 to 1829 than on the period from early time to 1763; and in the work of the second half-year more time should be given to the period since the Civil War than to that before.

For the guidance of both teachers and students the following suggestions are made:

1. That such topics as the routes of the principal discoverers and explorers, the resulting claims and settlements, campaigns of the principal wars, and territorial growth of the United States be studied primarily as map work.

2. That the European background should be given particular attention during the colonial period and during the national period to 1823.

3. That the various attempts at colonial union, the experiments in federal government, and the growth of federal power be especially emphasized.

4. That too much time should not be given to the topic of slavery, secession, and the reconstruction period. Instead special attention should be paid to territorial expansion, and social and industrial growth.

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* Teachers who desire a list of suggested topics for study in this course should consult Bulletin No. 96 of the College Entrance Examination Board.

5. That special importance should be accorded the policy of the United States in foreign affairs, tariff, banking, civil service, currency, corporation control, conservation of national resources, capital and labor, and other present day problems.

6. That familiarity with the lives of great Americans should be especially encouraged.

Civil Government*

One-Half Unit

Civil government in the United States (national, state, and local), its constitution, organization, and actual working.

The candidate will be expected to show such knowledge of the field as may be acquired from the study of a good text-book of not less than 300 pages, supplemented by collateral reading and discussion.

For the guidance of both teacher and student the following list of topics is suggested:

1. The purpose of government, including prevention of crime, care of dependents, preservation of public health, education, taxation, conservation of natural resources, immigration, and control of commerce.

2. The division of power and of activities among federal, state, and local governments.

3. The federal govenment: its organization and working.

4. State government: its organization, scope, and problems.

5. Local government, with special attention to the forms and problems of municipal government.

6. Parties: their function and organization; the machinery of nomination and election.

7. Attempts at reform: initiative and referendum, recall, short ballot, etc.

Note.—The above named list of topics is not intended to be exhaustive, but rather to suggest such representative topics as should be included in the school course.

American History and Civil Government

One Unit

Candidates who wish to offer American history and civil government should devote approximately two-thirds of the allotted time to the study of American history and one-third to the study of civil government. How this division of time

* Teachers who desire a list of suggested topics for study in this course should consult Bulletin No. 9 of the College Entrance Examination Board.

should be arranged must be left to the experience of the individual teachers, since the practice has been found to vary so widely that no general direction can be given.

In the time devoted to the study of American history, the course should cover lightly the period of discovery and settlement and the colonial period to 1763. The period from 1763 to 1837 should be covered with care. In the same way less emphasis may be placed upon the period from the end of the administration of Andrew Jackson to 1865, in order that time may be found to stress the period since the Civil War.

In the time devoted to the study of civil government the student should make a careful study of the Constitution of the United States, of the federal government, its powers, organization and workings; should understand the relations between the state and the federal government, and the general nature and extent of the powers reserved to the states.

Latin

Amount and Range of the Reading Required

(1) The Latin reading, without regard to the prescription of particular authors and works, should be not less in amount than Caesar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-VI.

(2) The amount of reading specified above should be selected by the schools from the following authors and works: Caesar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

Suggestions Concerning Preparation

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—just as it stands; the sentence should be read and understood in the order of the original, with the full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded, and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

Greek

Grammar: The inflections; the simpler rules for composi-:ion and derivation of words; syntax of cases and the verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive.

Elementary Prose Composition, consisting principally of detached sentences to test the candidate's konwledge of gram-natical construction. One-half unit

Xenophon: The first four books of the Anabasis. One unit

Homer-Iliad, I-III: The first three books of the Iliad omitting II, 494-end), and the Homeric construction, form, nd prosody. One unit

Prose Composition, consisting of continuous prose based n Xenophon and other Attic prose of similar difficulty. One-half unit

Sight Translation of Attic prose of no greater difficulty ıan Xenophon's Anabasis.

Xenophon and Sight Translation of Prose.

Homer-Iliad, I-III, and Sight Translation of Homer.

Elementary French

(First and Second Years)

Two Units

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The rudiments of grammar, including the inflection of e regular and the more common irregular verbs, the plural uns, the inflection of adjectives, participles, and pronouns; e use of personal pronouns, common adverbs, prepositions, ıd conjunctions; the order of words in the sentence, and the ementary rules of syntax.

3. Abundant easy exercises, designed not only to fix in e memory the forms and principles of grammar, but also cultivate readiness in the reproduction of natural forms of pression.

4. The reading of from 100 to 175 duodecimo pages of aduated texts, with constant practice in translating into ench easy variations of the sentences (the teacher giving glish) and in reproducing from memory sentences previ-sly read.

5. Writing French from dictation.

During the second year the work should comprise:

1. The reading of from 250 to 400 pages of easy modern

prose in the form of stories, plays, or historical or biographical sketches.

2. Constant practice, as in the previous year, in translating into French easy variations upon the texts read.

3. Frequent abstracts, sometimes oral and sometimes written, of portions of the texts already read.

4. Writing French from dictation.

5. Continued drill upon the rudiments of grammar, with constant application in the construction of sentences.

6. Mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

German

Elementary German (First and Second Years)

TWO UNITS

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The memorizing and frequent repetition of easy colloquial sentences.

3. Drill in the rudiments of grammar, that is upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs and the more usual strong verbs; also in the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order.

4. Abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

5. The reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise:

1. The reading of from 150 to 200 pages of literature in the form of easy stories and plays.

2. Accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages.

3. Continued drill upon the rudiments of the grammar directed to the ends of enabling the pupil, first, to use his or her knowledge with facility in the formation of sentences, and

secondly, to state his or her knowledge correctlv in the technical language of grammar.

Spanish

Elementary Spanish (First and Second Years)

Two Units

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax.

3. Abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readinesss in the reproduction of natural forms of expression.

4. The reading of about 100 pages of graduated texts, with constant practice in translating into Spanish easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read.

5. Writing Spanish from dictation.

6. Memorizing of Spanish passages of conversational prose and of simple verse.

During the second year the work should comprise:

1. The reading of about 200 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches.

2. Constant practice, as in the previous year, in translating into Spanish easy variations upon the texts read.

3. Frequent abstracts, sometimes oral and somtimes written, of portions of the texts already read.

4. Continued study of the elements of grammar and syntax, and the use of a composition-book.

5. Mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses.

6. Writing Spanish from dictation.

7. Memorizing of Spanish passages of conversational prose and of simple verse.

Mathematics

Elementary Algebra

One Unit

The four fundamental operations for rational algebraic expressions.

Factoring, determination of highest common factor and lowest common multiple, by factoring.

Fractions, including complex fractions, and ratio and proportion.

Linear equations, both numerical and literal, containing one or more unknown quantities.

Problems depending on linear equations.

Radicals, including the extraction of the square root of polynomials and of numbers.

Exponents, including the fractional and negative.

ONE AND ONE-HALF UNITS

The foregoing requirements and the following:

Quadratic equations, both numerical and literal.

Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations.

Problems depending on quadratic equations.

Plane Geometry

ONE UNIT

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurements of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of lines and plane surfaces.

Solid Geometry

ONE-HALF UNIT

The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of surfaces and solids.

Physics

1. The course of instruction in Physics should include:

(a) The study of one standard text-book, for the purpose of obtaining a connected and comprehensive view of the subject.

(b) Instruction by lecture-table demonstrations, to be

used mainly for illustration of the facts and phenomena of physics in their qualitative aspects and in their practical applications.

(c) Individual laboratory work consisting of experiments requiring at least the time of 30 double periods, two hours in the laboratory to be counted as equivalent to one hour of classroom work. The experiments performed by each student should number at least 30.

The aim of laboratory work should be to supplement the pupil's fund of concrete knowledge and to cultivate his power of accurate observation and clearness of thought and expression. The exercises should be chosen with a view to furnishing forceful illustrations of fundamental principles and their practical applications.

2. Throughout the whole course special attention should be paid to the common illustrations of physical laws and to their industrial applications.

3. In the solution of numerical problems, the student should be encouraged to make use of the simple principles of algebra and geometry to reduce the difficulties of solution.

Chemistry

One Unit

The following requirement has been planned so as to make it equally suitable for the instruction of the student preparing for college and for the student not going beyond the secondary school.

The candidate's preparation in chemistry should include:

(1) Individual laboratory work, comprising at least forty exercises.

(2) Instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

(3) The study of at least one standard text-book, to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry.

Biology, Botany, Zoology

One Unit Each

These courses should be developed on the basis of laboratory study guided by definite directions. This should be supplemented by the careful study of at least one modern elementary text-book. At least one-half of the time should be devoted to the practical studies of the laboratory. Pupils should be en-

couraged to do supplementary work in the field of natural history, especially if good nature studies have not preceded the high school course. A note-book, with carefully labeled outline drawings of the chief structures studied anatomically, with notes on demonstrations, and in explanation of drawings, with descriptions of experiments, with dates and with index, should be prepared by the pupil in connection with practical work.

Physical Geography

ONE UNIT

The most essential facts and principles of physical geography should be studied in the class room and laboratory. The order of presentation is not essential in general in the order given.

The field of physical geography in secondary schools includes (1) the earth as a globe, (2) the ocean, (3) the atmosphere, and (4) the land. Each topic should be treated so as to show its causal relations to other topics, and, so far as possible, the effects of earth features on life conditions should be emphasized.

Drawing

Freehand Drawing

ONE UNIT

The pupil's preparation in freehand drawing should be directed toward training him in accurate observation and in definite and truthful representation of form, without attempt to represent color or color values.

The pupil should learn to draw correctly with lines of good quality simple form in correct perspective in the size in which it is felt in the plane of the drawing, or larger or smaller. It is recommended that pupils should be taught to draw from the object itself rather than from the flat.

Correctness of proportion and accuracy in the angles and curves and structural relations of the parts of every object drawn are of the highest importance.

The elementary principles of perspective are to be thoroughly learned and the pupil should be able to apply them in freehand drawing from the object or from the imagination.

Mechanical Drawing

ONE UNIT

In the time available for mechanical drawing in most secondary schools, only very elementary courses in the subject should be undertaken, and thoroughness in fundamentals should be the main feature of such courses. Thus, for example, instead of requiring the pupil to make elaborate drawings, inked, tinted, and shaded, the effort should be, first of all, to

teach him the correct methods of making drawings in pencil. Teachers of mechanical drawing should be particularly watchful during the early part of a course to insist that the pupil use only the correct methods. Likewise, in the study of any form of projection, the object should be to understand the fundamental principles rather than to make elaborate drawings. Work which is merely copying or which can be done only by depending constantly upon help from the instructor is not the kind of training desired. A course in mechanical drawing should be one in the application of fundamental principles and not one in copying.

Physiology

ONE-HALF UNIT

A college preparatory course in Physiology should include a study (1) of the structure of the human body, both gross and minute, and (2) of the general use of the various tissues and organs of the body and their relation to one another. In the first instance, the structure of the body should be studied by beginning with the smallest units of structure and how they are formed into tissues and organs, and also the reasons for grouping certain organs into systems. The physiology of the body systems should cover the science in a general way. No attempt should be made to have the pupil assimilate a mass of detail and experimental facts, but rather to have him become familiar with the general phases of the role played by the various organs and systems in the body economy.

ADMISSION TO ADVANCED STANDING

Candidates for entrance to an advanced class in any of the courses are required either to sustain examinations in all studies of the course up to the point at which they seek admission, or to present from other colleges certificates covering such studies.

Schedule of Entrance Examinations

Entrance examinations will be held at the college in Newark on Wednesday and Thursday, June 14 and 15, 1922; also on Tuesday and Wednesday, September 19 and 20, 1922.

English—1.00-2.30, Thursday, June 15, and Wednesday, September 20.

Modern Language—3.00-4.30, Thursday, June 15, and Wednesday, September 20.

Mathematics—9.00-12.30, Thursday, June 15, and Wednesday, September 20.

History—1.00-4.30, Wednesday, June 14, and Tuesday, September 19.

Latin 9.00-10.30, Wednesday, June 14, and Tuesday, September 19.

Greek and Physics—10.30-12.30, Wednesday, June 14, and Tuesday, September 19.

Hours for examinations in other subjects will be arranged for with the candidates who offer such subjects.

SCOPE OF THE INSTRUCTION

DELAWARE COLLEGE

Delaware College offers instruction to candidates for degrees in the following schools:

Arts and Science: Languages and Literature, Mathematics, Science, History and Political Science, Education, Business and Economics.

Agriculture: Agronomy, Animal Husbandry, Horticulture.

Engineering: Chemical, Civil, Electrical, Mechanical.

School of Arts and Science

SCOPE OF THE WORK

The work of the School of Arts and Science is designed, in general, to prepare the student to meet problems of modern life and thought by training him for the duties of citizenship by means of an education that is cultural and informing, and which should cultivate in him a love of learning. It endeavors to impart to him that knowledge and to instill in him that sense of discipline which are essential to useful and forceful living, and which will enable him to think clearly and to express his thoughts logically, accurately, and concisely. To this end, it has as one of its main objects the development in the student of the power of logical deduction, quickness of perception, and sound judgment.

Specifically, it aims (1) to give the student an adequate foundation for graduate study leading to higher degrees, and for the pursuit of advanced studies, whether literary, scientific, or technical; and (2) to fit him to pursue intelligently and profitably studies that will prepare him for business and for the professions of journalism, law, medicine, teaching, and theology.

REQUIREMENTS FOR GRADUATION

Candidates for graduation are required to complete 128 credit term-hours of work in addition to Military Science.*

In addition to fulfilling these specific requirements, candidates for degrees must also obtain sixty honor

*To this requirement, will be added for students entering in 1922 and thereafter three hours per week for four years in the Department of Physical Education.

points, to be estimated on the basis of two points for the grade of A in a one-credit-hour course, and one point for the grade of B in a one-credit hour course.

Graduates from the School of Arts and Science who have offered for admission four years of Latin or Greek, or who have completed in college an equivalent amount of work in those subjects will receive the degree of Bachelor of Arts; all other graduates will receive the degree of Bachelor of Science.

PRESCRIBED SUBJECTS

	Credits
English	16
History	12
Mathematics	8
Modern Languages	12
Science (Bacteriology, Botany, Chemistry, Mineralogy and Geology, Physics, Physiology, Zoology).	12
	60
Military Science	12

FRESHMAN YEAR

First Term	H*	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
History, 1	3	3	History, 2	3	3
Language—Latin, French, or German	3	3	Language—Latin, French, or German	3	3
Mathematics, 3	4	4	Mathematics, 4	4	4
Elective--One subject: (Botany, Chemistry, Greek, Latin, Physiology)	--	3	Elective--One subject: (Botany, Chemistry, Greek, Latin, Physiology	--	3
		16			16
Military Science	3	1.5	Military Science	3	1.5
		17.5			17.5

*The capital letters H. and C. refer to Actual Hours and Credit Hours, respectively.

SOPHOMORE, JUNIOR, AND SENIOR YEARS

At the beginning of the Sophomore year, every candidate for the degree of Bachelor of Arts or Bachelor of Science shall select from the following list a major study, in which he shall complete thereafter 18 hours of work.

During these three years students must take, in addition to the required work in Military Science, all prescribed subjects not completed in the Freshman year and elective courses sufficient to make a total of thirty credit term-hours each year.

MAJOR ELECTIVES

Bacteriology, Physiology, and Hygiene
Biology
Business Administration
Chemistry
Education
English
French or German
Greek or Latin
History
Mathematics
Physics

ELECTIVE COURSES

	1st Term	*2d Term*
Ancient Languages, 1, 2, 3, 4, 5, 6, 7, 8,...	3	3
Ancient Languages, 21, 22, 23, 24, 31, 32	3	3
Bacteriology, 1 and 2	3	3
Bacteriology, 3	3	
Biology, 1, 2, 3, 4 ...	3	3
Biology, 5, 6	2	2
Biology, 7, 8	3	3
Biology, 9, 10 ...	2 or 3	2 or 3
Biology, 11, 12	2	2
Business, 1, 2, 3, 4 ..	3	3
Business, 5, 6, 7, 8 ..	3	3
Business, 9, 10	3	3
Chemistry, see pages 56-60.		
Education, 34	--	3
Education, 41, 42	3	3
English, 12	--	3
English, 21, 32	3	3
English, 33, 20	3	3
English, 41, 42	1	1
English, 45, 46	3	3
History, 15, 16	3	3
History, 21 and 22 ..	3	3
History, 29 and 30 ..	3	3
Horticulture, 33 ...	3	--
Hygiene, 3 and 4 ...	1	1
Mathematics, 5, 6 ...	4	4
Mathematics, 9 and 10	3	3
Mathematics, 13	2	--
Modern Languages, see pages 72-76.		
Philosophy, 5, 4	3	3
Physics, 1, 2	3	3
Physics, 3, 4	1.5	1.5
Physics, 10	--	3.5
Physiology, 1, 2	3	3
Psychology, 31, 32 ..	3	3
Sociology, 1, 2	3	3

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Ancient Languages and Literatures

PROFESSOR CONOVER

Throughout the course the aim is to enable the student to acquire facility and quickness in reading at sight and familiarity with the ancient order of thought. Word-meaning is fixed by inspecting form, derivation, and comparison with synonyms. The autnors are selected with a view to their representative character. The public and private life of the Greeks and Romans and their influence on modern literature and civilization are continually kept before the minds of the students. English derivatives and words kindred to all Indo-European tongues are frequently noted, and the general principles of comparative philology are explained and applied.

In addition to the department library, which contains the Delphini edition of Latin writers, the Attic orators and dramatists, etc., the department of classical philology in the general library is steadily growing. It contains bound volumes of the American Journal of Philology and of the Harvard Studies in Classical Philology. The American Journal of Philology is kept on file in the reading room.

LATIN

AL 1 and 2 Cicero, De Senectute and De Amicitia. Ovid, Metamorphoses, etc. Prose Composition.

Six credit hours

AL 3 and 4 Livy, 21st or 22d Book. Horace, Odes, Epodes, Satires, Epistles. Prose Composition.

Six credit hours

AL 5 and 6 Tacitus, Germania and Agricola. Plautus, Captives and Trinummus. Juvenal, Satires.

Six credit hours

AL 7 and 8 Seneca, Tragedies or Moral Essays. Ter-

ence, Adelphoe and Andria. Quintilian, Books X and XII. Lectures on Latin Literature and Inscriptions.

Six credit hours

GREEK

AL 21 and 22 White's First Greek Book. Anabasis, I, II.

Six credit hours

AL 23 and 24 Anabasis III, IV. Homer, Iliad, I-III. Herodotus VII, VIII.

Six credit hours

AL 25 and 26 Lysias, Orations. Plato, Apology and Crito. Aristophanes, Plutus or Clouds.

Six credit hours

AL 27 and 28 Demosthenes, Orations. Lucian, Dialogues. Aeschylus, Prometheus Bound.

Six credit hours

AL 29 and 30 Greek Prose Composition.

Four credit hours

AL 31 and 32 Greek Testament.

Four credit hours

Bacteriology, Physiology, and Hygiene

PROFESSOR PALMER AND MR. HITCHNER

The aim of this department is to give the student a knowledge of the fundamentals of bacteriology, point out its relation to the life of man, and prepare him for more advanced work in applied bacteriology. The instruction in physiology aims to acquaint the student with the structures of the body and the role of these various structures in its economy. Special emphasis is given to the study of the physiology of nutrition in order to acquaint the student with the requirements of the body for energy, repair, and the conservation of health. The work in hygiene has for its object a study of disease and the prevention of disease. Agricultural students are offered a special course in animal hygiene dealing with the more common diseases of live stock.

BACTERIOLOGY

Ba 1 and 2 General Bacteriology. A study of the form, structure, distribution, and the properties of bacteria and the relation of bacteria to animal and plant life. In the laboratory the student will be instructed in the technique necessary for practical work in bacteriology Both saprophytic and pathogenic organisms will be studied. It is recommended that students complete the course in general physiology before taking this course. Required of Juniors in Agriculture and elective for Juniors and Seniors in Arts and Science

Six credit hours

Ba 3 Advanced Bacteriology. (Prerequisite: Ba 1 and 2). A lecture and laboratory course, including an advanced study of the bacteria related to animal life and effects of such organisms upon the body tissues. The course also includes a study of natural and artificial immunity. Elective for Seniors in Agriculture and Arts and Science.

Three credit hours

PHYSIOLOGY

Phy 1 Physiology of Digestion, Metabolism, and Nutrition. This course considers the general structure and chemical composition of the body, together with the formation of tissues, organs, and systems. Following this the processes of digestion, absorption, metabolism, and nutrition are studied in detail. In the laboratory the student will carry out in the test tube digestive processes similar to those occurring in the body.

Three credit hours

Phy 2 Physiology of Respiration, Circulation, Etc. (Prerequisite: Phy 1). This course is a continuation in the study of general and special physiology and deals with circulation, respiration, excretion, special sense organs, and the glands of internal secretion.

Three credit hours

HYGIENE

Hyg 2 Animal Hygiene and Pathology. A study of the methods of preserving the health of farm animals, including the chief sporadic and infectious diseases of live stock, their symptoms, diagnosis, and means of control. It is recommended that students taking this course should have completed the courses in General Physiology and Bacteriology. Required of Juniors in Agriculture.

Three credit hours

Hyg 3 and 4 Hygiene and Sanitation. Instruction in this subject covers the principles of sanitation, the cause, methods of spread and prevention of epidemics, and the various methods of disinfection. Required of Juniors in Civil Engineering and elective for Arts and Science students.

Two credit hours

GRADUATE WORK

The Bacteriology and Hygiene laboratories receive a considerable amount of material for diagnosis and study. Such material offers excellent opportunity for advanced study and research. Properly qualified undergraduates and graduates may arrange with the Head of the Department for work of this kind.

Biology

PROFESSOR HOUGHTON AND MR. HITCHNER

The aim of biological instruction is to give the student some knowledge of the various living things by which he is surrounded, and to develop habits of careful observation and comparison. Most of the time devoted to this work is spent in careful study in the laboratory, which is supplied with simple and compound microscopes, reference work, microtome, reagents etc. There is also an excellent collection of illustrative specimens and charts.

B 1 and 2 Elementary Zoology. A study of variations in the structure and life history of the different classes of animals their habits, and relations. The student secures a genera knowledge of the principles of classification based upon the

evolution of the animal kingdom, and the principles of Zoology. Selected types of the principal groups of animals, from Protozoa to Mammalia, of which dissections, drawings, and notes are required, are studied in the laboratory. The course gives a comprehensive view of the science of Zoology to the student taking no further work, and forms a basis for advanced work. One recitation or lecture and four hours of laboratory work a week. Required of Juniors in Agriculture. Elective for Arts and Science students.

Six credit hours

B 3 and 4 Systematic and Economic Zoology. (Prerequisite: B 1 and 2). In this course the student becomes acquainted with a large number of our common vertebrates and learns something of their structure, life histories, habits, and economic importance. Much attention is given to the work of tracing typical specimens, representing as many groups as possible, of Fishes, Batrachians, Reptiles, Birds, and Mammals, by means of keys which are based largely upon structural characters. Thus the student gains a clear idea of the relations of forms and the characters upon which classifications are based. Dissections are made when necessary to understand and properly use the keys. Four hours of laboratory work a week. Elective for students in Arts and Science and in Agriculture.

Four credit hours

B 5 and 6 Economic Entomology. A course treating of the more important injurious insects of orchard, garden, and field crops, also the insect pests of domestic animals and the household. The work deals with their structure, life histories, and descriptions, and the most approved methods for their control. The most important forms are placed before the class for careful examination and comparison. Special emphasis is laid upon the necessity for the ready determination of species. Two recitations or one recitation and two hours of laboratory work a week. Elective for students in Arts and Science and in Agriculture.

Four credit hours

B 7 and 8 General Botany. As is indicated by its title, this is a general course in botany which aims to give the stu-

dent a comprehensive idea of the subject as a whole. The topics to which particular attention is given in the first term are as follows: Seeds and seedlings; roots, stems, and leaves; the morphology, evolution, and taxonomy of the Thallophyta Bryophyta, and Pteridophyta. In the second term the principal topics are as follows: The Gymnospermae; winter buds; the flower and fruit of the higher seed plants; the morphology and taxonomy of the Angiospermae; ecology, and economic botany. One recitation or lecture and four hours of laboratory work a week. Required of Freshmen in Agriculture. Elective for Arts and Science students.

Six credit hours

B 9 and 10 Systematic and Economic Botany. (Prerequisite: B 7 and 8). A course dealing with economic plants other than staple crops and ornamentals. It includes studies of plants poisonous to man and poisonous or injurious to live stock; medicinal plants and their cultivation; collection and preparation of plants for the drug trade; weeds, their dispersal and eradication, etc. This course is designed especially to meet the needs of Pre-Medical students and those in the course in Agriculture who wish to pursue further studies in botany. One recitation or lecture and two or four hours of laboratory work a week.

Four or six credit hours

B 11 and 12 Systematic and Economic Entomology. (Prerequisite: B 5 and 6). An advanced course in entomology dealing with the structure, habits, and economic importance of insects not studied in B 5 and 6. Considerable time will be devoted to disease-transmitting forms, and to a study of laboratory methods in economic entomology. Field work in studying and collecting insects will be required and the student will be expected to prepare a representative collection of insects which will become his property when the course is completed. Four hours of laboratory work a week.

Four credit hours

Business Administration

PROFESSOR HARRIS

The aim of this department is to give its students a thorough knowledge of general economics and of the principles underlying all business, with particular attention to some of the more important aspects of commercial and industrial life.

Bus 1 and 2 Economics. A foundation course in the principles of Economics, both theoretical and practical, designed as a foundation for, and required as a prerequisite to all other Business courses except Business 9 and 10. The history, structure, and development of economic activity; modern production, money, labor, and other phases of human relationships. Open to Juniors and Seniors.

Six credit hours

Bus 3 and 4 Business Law. A general study of such phases of law as are most important to business men. Contract Law, Negotiable Instruments, Torts Agency, Real and Personal Property. Open to Seniors.

Six credit hours

Bus 5 and 6 American Railroad Transportation. A careful study of the railroad system of the United States, in its relation to the economic development of the country; the financial, business, and inter-railway organization of the various systems both past and present, together with a detailed analysis of the several branches of the service. Open to Seniors.

Six credit hours

Bus 7 and 8 Money and Banking. A thorough analysis of the development of money as a commodity and a medium of exchange; credit in its various forms and its relation to money; single versus double standards of value; modern banking systems and forms; banks in their relation to industrial activity; the Federal Reserve system and its work. Open to Seniors.

Six credit hours

Bus 9 and 10 Accounting. An elementary study of the theory and practice of bookkeeping and accounting; single and double entry; trial balances, income sheets, balance sheets, interpretation of accounts; columnar books. Open to Juniors and Seniors.

Six credit hours

Chemistry

PROFESSOR PENNY, ASSOCIATE PROFESSOR TIFFANY, AND PROFESSOR ————

The courses in Chemistry are designed to have a general educational value as well as to offer special technical training. The non-technical student may receive a general knowledge of the science, especially in Inorganic Chemistry and in Qualitative Analysis. Students in Agriculture and Engineering and pre-medical students, may find much that will be indispensable in their several professions. Students intending to follow Chemistry as an occupation may receive such instruction in the theoretical phases of the subject, and such training in practice, as will fit them to fill responsible positions as chemists.

A rapidly growing library of works on chemistry is available, which students are encouraged to consult freely. To foster the habit of technical reading a Journal Club has been formed, under the direction of a member of the faculty in the Department of Chemistry. The club holds monthly meetings at which the most important articles in current chemical literature are read and discussed.

C 11 and 12 Inorganic Chemistry. These courses, consisting of experimental lectures, with text-book and occasional quizzes, two hours a week through the year, treat of the more important elements and their compounds. The treatment is adapted to the needs of those beginning the subject. Students in Agriculture and in Civil, Electrical, and Mechanical Engineering are required to take C 13 and 14 also.

PROFESSOR PENNY *Four credit hours*

C 13 Qualitative Analysis. This is an elementary course in qualitative analysis, with some preliminary exercises in chemical experiments, designed for students who are not specializing in chemistry. The subject is taught by means of lectures, recitations and, chiefly, laboratory practice. It includes tests for the more common metals; a sufficient number of samples are analyzed by the student to give a fair understanding of the principles and methods. Three hours a week.

One credit hour

C 14 Qualitative Analysis. This course is a continuation of C 13, which it follows, in the second term. Tests for the

more important acids are studied, and further practice is given in the analysis of unknown substances. Three hours a week.

One credit hour

C 15 **Qualitative Analysis.** This course is designed for students in Chemical Engineering or those specializing in Chemistry. It is given in the first term only and covers about the same ground as the two courses C 13 and 14, viz., the principles and practice of elementary qualitative analysis, with some preliminary exercises in chemical experiments. Six hours a week.

Two credit hours

C 16 **Advanced Qualitative Analysis.** This course is a continuation of C 15, which it follows, in the second term. It is designed to give a more thorough understanding of the subject than is possible in the more elementary courses. Tests for the rarer metals and acids are studied. The use of the spectroscope is taught. Many mineralogical and commercial samples are analyzed. Six hours a week.

Two credit hours

C 21 and 22 **Organic Chemistry.** (Prerequisites: C 11 and 12). These courses, each of three hours a week, consisting of experimental lectures with text-book and occasional quizzes, treat of the more important compounds in aliphatic and aromatic chemistry. As supplementary to these courses the laboratory courses C 35 and 36 are offered in the following year.

PROFESSOR PENNY *Six credit hours*

C 23 **Gravimetric Analysis.** (Prerequisites: C 11 and 12 and 13 or 15). This is a laboratory course, supplemented by lectures and recitations. Some of the more important methods of gravimetric analysis are studied, such as the estimation of metals and acids. Six hours a week.

ASSOCIATE PROFESSOR TIFFANY *Two credit hours*

C 24 **Volumetric Analysis .** (Prerequisites: C 11 and 12, 13 or 15, and 23). This course is a continuation of C 23. It treats of the more important methods of volumetric analysis, such as acidimetry, alkalimetry, oxidation and reduction methods, iodimetry, and precipitation—volumetric methods. A number of technical products and articles of commerce are anal-

yzed, such as the important acids, alkalies, bleaching powder, ores, etc. Six hours a week.

ASSOCIATE PROFESSOR TIFFANY *Two credit hours*

C 26 Agricultural Analysis. In this course practice is given in the analysis of agricultural products, such as feeds and dairy products, and of fertilizers. Much attention is given to standard and rapid methods of volumetric analysis. One hour lecture and six hours laboratory.

Three credit hours

C 31 and 32 Industrial Chemistry. (Prerequisites: C 11 and 12, and 21 and 22). These courses consist of three hours a week of lectures, recitations, and conferences on the more important technical operations of chemistry. A study is made of plant equipment, as well as of the chemical principles and processes, used in such industries as the manufacture of acids, alkalies, soap, chlorine bleaching powder, paper, dyes, cement, glass, paints, iron and steel, the refining of oil, etc. Numerous inspection trips are made during the year to manufacturing plants. These courses will be given to the Junior and Senior classes in 1922-1923 and in alternate years thereafter.

ASSOCIATE PROFESSOR TIFFANY *Six credit hours*

C 33 and 34 Chemical Calculations. These courses, consisting of two hours of lectures a week, deal chiefly with the principles of stoichiometry. All of the calculations arising in analysis are studied in detail by means of assigned problems to be solved by the student and subsequently to be discussed in class. These courses will be given to the Junior and Senior classes in the year 1923-1924 and in alternate years thereafter.

Four credit hours

C 35 and 36 Organic Preparations. (Prerequisites: C 11 and 12, 15, 16, 21 and 22, 23 and 24). These are laboratory courses, consisting of six hours each week, in the preparation of some of the more important aliphatic and aromatic bodies. The type of reaction and the properties of the substance are studied in each case. Written reports on the methods employed and on the properties and uses of the substance prepared are required from each student. Such fundamental reactions as

sulphonation, nitration, reduction, acetylation, etc., are carefully studied. A few of the simpler intermediate bodies used in making dyes, as well as some of the simpler dyes, are made.

ASSOCIATE PROFESSOR TIFFANY *Four credit hours*

C 37 **Gas Analysis.** (Prerequisites: C 11 and 12, 21 and 22, 15 and 23). This is a laboratory course with explanatory lectures. It treats of the methods of analyzing flue gases and illuminating gas, of the use of the nitrometer, of the calculations involved and of the application to practice. Three hours a week.

PROFESSOR PENNY *One credit hour*

C 41 and 42 **Physical Chemistry.** These courses of three hours a week consist of lectures with text-book. They treat in an elementary way of the gas laws, thermodynamics, solutions, osmotic pressure, conductivity, ionization, thermochemistry, chemical kinetics, equilibrium, the phase rule, radioactivity, and the like.

PROFESSOR PENNY *Six credit hours*

C 43 **Theoretical Electrochemistry.** This course, given in the first term, consists of lectures and recitations. It treats of the theories bearing on electrochemistry. Faraday's laws, ionic migration, electromotive force, polarization, conductivity of solutions, molten electrolytes, the theory of primary and secondary cells, are the chief topics considered.

Three credit hours

C 44 **Applied Electrochemistry.** This course, given in the second term, is supplementary to C 43. It consists of lectures and recitations with much practical work in the laboratory. The electrolysis of alkali chlorides, the refining of metals, the production of pigments, electroplating, electroanalysis, electric furnaces, the fixation of atmospheric nitrogen, and similar processes are the chief topics considered. Trips of inspection are made during the year to plants in the vicinity where electrochemical processes are carried on. The course consists of two hours of lectures and recitations and three hours of laboratory weekly.

Three credit hours

C 47 Technical Analysis. (Prerequisites: C 11 and 12, 15, 23 and 24). This laboratory course is designed for students in Chemical Engineering and those who specialize in industrial chemistry. It treats of the methods of analysis used in the chemical industries, or specially applied to industrial products and articles of commerce. The methods actually used in control laboratories are largely followed. Among the substances analyzed are acids, alkalies, soaps, oils, fats and waxes, foods, coal, ores, alloys, etc. Twelve hours a week.

ASSOCIATE PROFESSOR TIFFANY *Four credit hours*

Education and Psychology

PROFESSOR WILKINSON

Teaching is one of the professions which college graduates enter, either temporarily or permanently, in relatively large numbers. For certification to teach in secondary schools the State Department of Education in Delaware requires (1) that the candidate shall be a graduate of an approved college or university, and (2) that he shall have had, during his college course, a prescribed amount of professional preparation for teaching. Similar requirements now prevail very generally in other states. The primary purpose, therefore, of the courses in Education and Psychology is to give students an opportunity to fulfill the requirement for professional training. Although the courses are given with the profession of teaching primarily in mind, much of the work offered has important applications in other fields and so may be taken with profit by students who have other aims in view.

In addition to giving certain courses in the University, the Department of Education aims to cooperate with other agencies in making such investigations, measurements, etc., as may help to determine and promote the efficiency of public education in the State.

Ed 32 History and Principles of Education. This course traces the development, in modern times, of important educational ideals with reference to such problems as aims, curriculum-making, methods of teaching, etc., and seeks to construct, from established psychological and sociological principles, a theory of education appropriate to a democratic society. Open to Juniors and Seniors, and to Sophomores in Agriculture who expect to specialize in Vocational Agricultural Education.

Three credit hours

Ed 41 The Technique of High School Teaching. (Prerequisite: Psychology 31 or its equivalent). This course aims to give the student insight into and some command of accepted principles and methods of high school instruction and class management. It combines practice in the use of standard intelligence and achievement tests, now available for determining the efficiency of instruction, with a consideration of those matters of technique that make for classroom teaching. Discipline and student morale, economy in classroom routine, lesson-planning, supervised study, the socialized recitation, and methods of motivating school work are among the topics treated. Open to Juniors, Seniors, and graduate students.

Three credit hours

Ed 42 Principles of Secondary Education. (Prerequisites: Pschology 31 and Education 41 or their equivalents). This course begins with a brief history of secondary education in the United States; compares secondary education in this country with that in certain European countries; examines current tendencies and practices; and seeks to organize the principles learned into a sound working theory of secondary education with respect to its aims, organizations, programs of studies, and methods of teaching. Open to Juniors, Seniors, and graduate students.

Three credit hours

Educational Administration and Supervision. Courses designed primarily for graduate students who are preparing for administrative or supervisory positions in Education. Details as to content, hours of meeting, credits, etc., to be arranged.

Psy 31 Psychology. Introductory Course. A survey course designed to give the student a general view of the important aspects of mental life and their relations to human behavior. Open to Juniors and Seniors, and to Sophomores in Agriculture who expect to specialize in Vocational Agricultural Education.

Three credit hours

Psy 32 Psychology. Advanced Course. (Prerequisite: Psy 31 or its equivalent). A more intensive study of certain psychological problems, making use of the experimental method

of investigation and emphasizing the applications of the facts learned. Open to Juniors, Seniors, and graduate students.

Three credit hours

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. VAN KEUREN, AND MR. BLAIR

The courses in the Department of English are designed (1) to enable every student after graduation to express his ideas, orally or in writing, in accurate, clear, effective English; and (2) to give to students through required and elective work an acquaintance with the best authors in English and American Literature and an appreciation of good poetry and prose. All Freshmen are required to take Composition, which involves training in oral and written expression; all Sophomores, a general course in Literature, which treats writers, types, and movements. Seniors in Arts and Science and in Engineering are required to take an additional course in English. Elective courses for 1922-1923 are: First term—E 21, Modern Drama; E 33, American Literature; E 45, Victorian Poetry. Second term—E 12, Advanced Composition; E 20, Shakspere; E 32, Classics in Translation; E 46, The Novel.

E 1 and 2 Composition. An elementary course which lays special stress on accuracy and clearness in expression. Recitations, themes, practice in public speaking, conferences, and outside readings. Required of all Freshmen.

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. VAN KEUREN, AND MR. BLAIR

Six credit hours

E 3 and 4 Literature. A study of selected English poems first term; a study of the drama, essay, novel, and short-story second term. Lectures, recitations, and reports. Required of all Sophomores in Engineering and Agriculture.

ASSOCIATE PROFESSOR FOSTER *Four credit hours*

E 5 and 6 Literature. General Survey. A brief survey of the history of the English language and literature, followed by a more detailed and thorough study of the main literary forms—narrative and lyric poetry, the drama, the novel, and the essay. Discussions, lectures, outside readings, reports, and conferences. Required of Sophomores in Arts and Science.

PROFESSOR DUTTON *Six credit hours*

E 7 and 8 Composition. Technical English for Engineers. In this course, students have practice in public speaking, and in the writing of business letters, reports, instructions, orders, specifications and contracts, and general engineering papers. Required of Seniors in Engineering.

PROFESSOR SYPHERD *Two credit hours*

E 9 and 10 Composition and Literature. A study of the English essay, with exercises in expository writing, first term; a study of the short-story in English, with exercises in narrative writing, second term. Required of Seniors in Arts and Science.

PROFESSOR SYPHERD *Four credit hours*

E 12 [11] Composition.. An advanced course in narrative and descriptive writing. Themes, outside reading, and conferences. Elective for Sophomores and Juniors in Arts and Science.

MR. VAN KEUREN *Three credit hours*

E 13 and 14 Composition. Technical English for Agricultural students. A course in the writing of reports, newspaper articles, and theses, and in the preparation and delivery of speeches and addresses. Elective for Seniors in Agriculture.

PROFESSOR DUTTON *Two credit hours*

E 15 Literature. Romantic Movement. A study of the social, philosophical, and literary tendencies which are found in the prose and poetry written between 1798 and 1832. Elective for Juniors and Seniors. (Omitted in 1922-1923).

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 19 [20] Literature. Shakspere. The Elizabethan stage; social, political, and literary conditions; a study of selected plays. Elective for Juniors and Seniors.

PROFESSOR DUTTON *Three credit hours*

E 22 [21] Literature. Modern Drama. Preliminary view of the English drama since Shakspere. Recent and contemporary European drama (Continental plays in translation). Elective for Juniors and Seniors.

MR. BLAIR *Three credit hours*

E 27 [28] Literature. A literary study of the Bible. This

course is an introduction to the literary study of the English Bible. It involves a general consideration of the contents and the composition, a brief review of the history of the Translations or Versions, a discussion of the literary forms and the literary qualities, and a study of its influence in English Literature (Omitted in 1922-1923).

PROFESSOR SYPHERD *Three credit hours*

E 31 [32] Literature. Classics in Translation. A study of Greek and Roman classics which have influenced English Literature and English thought. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 34 Literature. A general survey of the field of American literature from Franklin to the present time, and an intensive critical study of the most important work of the chief American poets and prose writers. Lectures, recitations, outside reading, and reports. Elective for Sophomores and Juniors

PROFESSOR DUTTON *Three credit hours*

E 36 Literature. Chaucer. A critical and appreciative study of some of the Canterbury Tales and of other poems by Chaucer. Elective for Juniors and Seniors. [Omitted in 1922-1923].

PROFESSOR SYPHERD *Three credit hours*

E 39 Literature. Emerson. A study of Emerson as poet essayist, and philosopher. Elective for Juniors and Seniors [Omitted in 1922-1923].

PROFESSOR DUTTON *Three credit hours*

E 41 and 42 Public Speaking. A course in the theory and practice of public speaking. Elective for Sophomores, Juniors and Seniors. This course may be elected for either term.

MR. BLAIR *Two credit hours*

E 45 Literature. Victorian Poetry. This course is centered about the poems of Browning, Tennyson, Arnold, and Swinburn The aim of the course is to obtain a knowledge of the poetry of the period, to study the poems as an expression of the philosophy of life of each of the poets, and to correlate this poetry with the social movements of the time. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 46 **Literature.** Nineteenth Century Novel. A study of the main novelists of the century: Scott, Dickens, Thackeray, Eliot, Meredith, and Hardy. Collateral reading in the contemporary novel. Elective for Juniors and Seniors.

Associate Professor Foster *Three credit hours*

Geology and Mineralogy

Professor Penny and Associate Professor Tiffany

The courses in Mineralogy and Geology are designed to give an insight into the theoretical side of the subjects but more especially a knowledge of their practical and economic relations. A good collection of mineral and geological specimens is available.

Geol 31 **Mineralogy.** This course includes a brief study of crystallography and of the more important materials, with some laboratory work in determinative mineralogy. Special attention is given to minerals of economic or industrial value, such as ores. Trips of inspection are made to places in the vicinity where matters of mineralogical interest may be studied.

Two credit hours

Geol 32 **Geology.** This course consists of lectures and recitations. It treats of dynamic, structural, and historical geology. Particular attention is paid to the economic phases of the subject.

Two credit hours

History and Political Science

Professor Vaughn, Professor Bevan, and Mr. Blair

The courses in this Department are arranged in the approximate order in which they should be taken by the student. In the first two years certain courses are required; all other courses are elective for properly qualified students. Sophomores may, with permission of the Department, elect certain courses in addition to the required work. Courses 13, 14, 15, and 16 will usually be given in alternate years.

In all courses in the Department emphasis is placed upon systematic and thoughtful work, upon class-room discussion, and upon the problems of present-day citizenship.

H 1 and 2 Modern European History. A general survey of European History in its social and political aspects from 1500 to the present time. This course is designed for students beginning historical study and affords the basis for advanced work in European History. Text-book, discussion, and collateral readings. Required of Freshmen in Arts and Science.

PROFESSOR BEVAN AND MR. BLAIR *Six credit hours*

H 3 History and Government of Delaware. The aim of this course is to give a general view of the history of Delaware as colony and state and also to outline the main features of its government. Required of Freshmen in Engineering and of Sophomores in Agriculture.

PROFESSOR VAUGHN *One credit hour*

H 5 History of the United States (1736-1848). An advanced course in American History, embracing a study of the Revolutionary period, the formation of the Constitution, foreign relations, early national development, Jacksonian democracy, westward expansion, and the Mexican War. Required of Sophomores in Arts and Science.

PROFESSOR VAUGHN *Three credit hours*

H 6 History of the United States (since 1848). A continuation of H 5 dealing with the slavery controversy, the Civil War, reconstruction problems, material development, and contemporary history and problems. Required of Sophomores in Arts and Science.

PROFESSOR VAUGHN *Three credit hours*

H 13 The Renaissance and Reformation. The political background of the period is studied, but special emphasis is laid on social and economic conditions, the developments in art and literature, and the causes and results of the religious revolution. Elective for Juniors and Seniors. [Omitted in 1922-1923].

PROFESSOR BEVAN *Three credit hours*

H 14 The French Revolution and Napolean. A special study of the Revolutionary era: the characteristics of the Old Regime, the philosophers and economists, the course of the Rev

olution, the rise of Napoleon, and the wars of the Empire. Elective for Juniors and Seniors. [Omitted in 1922-1923].

PROFESSOR BEVAN *Three credit hours*

H 15 Constitutional History of England. A survey of the historical development of English political and legal institutions. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 16 History of Greece. A general survey of Greek History to the Roman Conquest. Emphasis is placed upon the cultural epoch following the Persian Wars and some attention is given to architecture, sculpture, literature, philosophy, and social customs. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 21 and 22 American Government. A general course dealing with the organization and activities of our American government—both national and state. Considerable stress is placed upon practical problems and present-day developments. Required of Seniors in Agriculture and elective for Juniors and Seniors in Arts and Science.

PROFESSOR VAUGHN *Six credit hours*

H 27 and 28 Studies in Delaware History. An advanced course which offers opportunity to develop special topics in the social, economic, and political history of the state. The aim is partly information and partly training in research work. Elective for Juniors and Seniors.

PROFESSOR VAUGHN *Six credit hours*

H 29 and 30 The student is expected to do intensive work in the subject either of Comparative Constitutional Law or the History of Political Theories.

PROFESSOR BEVAN

Mathematics

PROFESSOR HARTER, PROFESSOR PRESTON, ASSISTANT PROFESSOR T. D. SMITH, ASSISTANT PROFESSOR REES, AND ASSISTANT PROFESSOR RANKIN

One year of Mathematics, covering Advanced Algebra with a rapid review of the elements, and Trigonometry, Plane and

Spherical, is required of all Freshmen except those in the School of Agriculture.

Mathematics is fundamental to the various technical courses of the College and is essential to an understanding of the laws of the physical sciences. It is becoming of increasingly wider use in the expression and interpretation of the financial and industrial relations of modern social and economic life. The following courses are intended to fit the student to apply the mathematical method to his scientific studies and to enable him to follow formulated expressions of the relationship between parts in a chain of reasoning. Mathematics is thus lifted above the plane of a purely disciplinary study, for, in addition to the training in a rigorous logic, it gives the power of appreciating and using the universal language of scientific thought.

All Freshmen in Arts and Science and in Engineering will take M 3 and M 4. Students in Arts and Science with the proper prerequisites may elect M 5 and M 6. Several additional courses are added which are open for election to the student who has the necessary preparation.

To enter a course for which another is prerequisite, the student must have passed the prerequisite course. A condition in the first semester, however, will not operate to shut out a student from his class until three weeks after the beginning of the second semester, during which time an opportunity will be given for satisfying the condition in the prerequisite course.

A student in engineering who has not offered the entrance requirement in solid Geometry must take M 23, for which no college credit will be given.

M 3 College Algebra, including a review of the elements and Trigonometry. Required of Freshmen in Arts and Science and in Engineering.

Four credit hours

M 4 Advanced Algebra and Trigonometry, Plane and Spherical. (Prerequisite: M 3). Required of Freshmen in Arts and Science, and in Engineering.

Four credit hours

M 5 Analytic Geometry, covering conic sections, higher plane curves, and elements of geometry of space. (Prerequisite: M 4). Required of Sophomores in Engineering.

Four credit hours

M 6 Differential and Integral Calculus. (Prerequisite M 5). Includes a working knowledge of Differential and Integra

Calculus, forming a basis to the application to Mechanics. Required of Sophomores in Engineering.

Four credit hours

M 9 and 10 General Astronomy.

Six credit hours

M 11 Theoretical Mechanics. (Prerequisite: M 6). This course covers the applications of calculus to the solution of practical problems in Mechanics and the fundamentals of Theoretical Mechanics. Required of Juniors in Engineering.

Four credit hours

M 12 Theoretical Mechanics. (Prerequisite: M 11). Required of Juniors in Engineering.

Four credit hours

M 13 Method of Least Squares. The theory of errors of observations.

Two credit hours

M 14 Theory of Functions.

Two credit hours

M 18 Applied Mathematics in Agriculture. A rapid review of elementary Mathematics with sufficient advanced material, selected to solve the mathematical problems of the student of Agriculture. The volume of silos, in Mensuration; simple problems of farm surveying, in Trigonometry; milk production curves, in Graphs; fertilizer and cement mixtures, in Averages and Mixtures; percentage, profit and loss, compound interest, annuities, depreciation and farm loans, in the Theory of Investment are type problems to be studied. Required of Freshmen in Agriculture.

Two credit hours

M 23 Solid Geometry. For all Freshmen in Engineering who have not offered Solid Geometry for entrance. Two hours a week, for which no college credit will be given.

Military Science and Tactics

MAJOR ROW, CAPTAIN MACKENZIE, AND CAPTAIN SPARKS

A Senior Unit of the Reserve Officers Training Corps has been established at the University of Delaware. The course of instruction is compulsory for members of the Freshman and Sophomore classes. Three hours of military instruction a week are required of members of the Junior and Senior classes. The advanced course of the R. O. T. C.., requiring five hours a week of instruction, is optional for Juniors and Seniors who have successfully completed the Freshman and Sophomore Courses. Each student of the Advanced Course is entitled to receive from the government the value of the government ration each day of the period from enrollment to date of graduation. Members of the Advanced Course are required to attend one R. O T. C. Camp of six weeks' duration, normally during the summer following the Junior school year. Each student attending the Advanced Course R. O. T. C. Camp is entitled to adequate funds for travel to and from camp, uniforms and subsistence while at camp, and one dollar a day for the actual period of attendance. Qualified graduates of the Advanced Course will be offered commissions in the Officers Reserve Corps, United States Army.

Mil 1 and 2 Freshman Course. I. Elementary Subjects of Military Training: (a) Principles of the organization and administration of a company; (b) Military Hygiene, first aid and sanitation; (c) Military courtesies and customs of the service; (d) Interior guard duty.

II. Physical Training: (a) Setting up exercises; (b) Mass games and mass athletics; (c) College Athletics.

III. Infantry Drill: (a) Close and extended order; (b) Ceremonies.

IV: Infantry Weapons and Equipments: (a) The Infantry pack; (b) The rifle; (c) The bayonet.

Three credit hours

Mil 3 and 4 Sophomore Course. I. Military Sketching and Map Reading: (a) Map reading; (b) Military sketching; (c) Problems in map reading.

II. Physical Training: (a) Setting-up exercises; (b) Mass games and mass athletics; (c) College Athletics.

III. Infantry Drill: (a) Fundamentals of leadership; (b) Close and extended order; (c) Combat.

IV. Infantry Weapons: (a) The rifle; (b) The automatic rifle; (c) The machine gun.

V. Minor Tactics: Covering Detachments, patrols, advance and rear guards, outposts and types of formations for security.

Three credit hours

Mil 5 and 6 Junior Course. I. Field Engineering: Instruction to include the methods of military field engineering in all types of trenches and obstacles. Organization of working parties and tasks. Selection of location for trenches. Concealment and camouflage.

II. Physical Training: (a) Setting-up exercises; (b) Mass games and mass athletics; (c) College athletics.

III. Infantry Drill: (a) School of the Battalion in close order; (b) School of the Regiment in close order; (c) Participation with Unit in drills and exercises.

IV. Infantry Weapons: (a) The pistol; (b) Hand and rifle grenades; (c) Trench Mortars and One-pounder Gun.

V. Minor Tactics: Offensive and defensive conduct of small units. Combat and Reconnaissance. Orders. Deployment. Advancing the Attack. The Assault. Position warfare. Approach marches. Organization of the ground. The Company in support, in reserve, and acting alone. Machine guns. One-pounder and light mortars. Ammunition supply.

Five credit hours

Mil 7 and 8 Senior Course. I. Military History and Policy of the United States: (a) Important campaigns and battles in the history of the United States and the tactical deductions therefrom; (b) History of the military policy of the United States, including the period of the World War; (c) Economic history of the United States and the relations existing between our economic and military conditions and those of Europe, Asia, and South America.

II. Physical Training: (a) Setting-up exercises; (b) Mass games and mass athletics; (c) College athletics.

III. Infantry Drill: (a) Drills and tactical exercises; (b) Participation in the drills of the unit.

IV. Military Law and rules of Land Warfare: (a) The Articles of War; (b) Relation of the military to civil authority; (c) Courts martial; (d) Evidence.

V. Administration: (a) Company paper work (so much as a lieutenant should know); (b) Company administration (management and interior economy of a company).

VI. Musketry: (a) Principles of Musketry. Range estimation. Target designation. Fire distribution. Communication, signals, and transmission of fire data. Conduct of fire, to include the functions of the platoon commander with so much of the functions of a company commander as may be necessary for an intelligent understanding.

Five credit hours

Mil 5 and 6 (Non R. O. T. C.)

Three credit hours

Mil 7 and 8 (Non R. O. T. C.)

Three credit hours

Modern Languages and Literatures

PROFESSOR E. L. SMITH, ASSISTANT PROFESSOR SALESKI, ASSISTANT PROFESSOR BRINTON, AND ASSISTANT PROFESSOR KIRKBRIDE

French and German are among the required subjects of study, and Spanish and Italian are offered to those who wish to elect them. With the approval of the Faculty any year or years of this work may be elected by a student in addition to the amount required in his course.

The aim of the courses offered in Modern Languages is to provide elementary and intermediate instruction in German, French, Spanish, and Italian. Students who have completed commendably the courses offered in these languages may expect to possess a good pronunciation, an accurate reading knowledge of the language, and an acquaintance with the more important

authors and some familiarity with literary groups and movements. The scientific and commercial aspects of the languages receive due attention but without overlooking their cultural values. An effort is made to acquaint the student with the several European civilizations from the linguistic and literary point of view, and to inspire in him such a love for these languages and literatures as will be a source of pleasure and intellectual growth.

FRENCH

ML 1 and 2 Beginning French. For Freshmen who may elect French to satisfy their required work in Modern Languages. This course is a required course for students whose entrance preparation in French has been found to be deficient (see page 27). Upon satisfactory completion of this course, students are prepared to enter ML 3 and 4.

Six credit hours

ML 3 and 4 Intermediate French. This course is designed to meet the needs of Freshmen who have satisfactorily passed the departmental entrance test in French. A rapid but thorough review of French grammar. French composition is continued throughout the course by means of themes, reports, letter-writing, etc. Aural and phonetic training. After the grammar review has been completed, one period a week is devoted to the rapid reading of French texts, newspapers, etc., which are used as a basis for vocabulary building.

Six credit hours

ML 5 and 6 Advanced French. Continuation of the work of ML 3 and 4 (Prerequisite: ML 3 and 4 or their equivalent). Formal composition. Outline of history of French literature with illustrative reading. Aural training and definite emancipation from dictionary are two primary aims of this course.

Six credit hours

ML 7 Continuation of ML 5 and 6. First semester of Junior year. Elective for students who have completed ML 5 and 6 or equivalents. Aim is a wider reading knowledge and further vocabulary building. Texts chosen to form introduction to work in literature courses. Conducted entirely in French.

Three credit hours

ML 8 Literature. Second half of Junior year. Elective for students who have completed ML 7. French Literature from 1600 to Chateaubriand. French classic drama—Corneille, Racine and Molière. Voltaire, Diderot, and Rousseau. Readings in literary history and criticism.

Three credit hours

ML 9 and 10 Nineteenth Century Literature. From the Romantics to the reaction against Naturalism. Drama, poetry, and the novel. The latter part of the course will treat contemporary writers and tendencies.

Six credit hours

SPANISH

ML 21 and 22 Elementary Spanish. Stress is laid on accurate pronunciation, mastery of elements of grammar, and the acquisition of vocabulary. Oral and written exercises. Reading of easy modern Spanish prose. Composition and conversation. Hills and Ford, Spanish Grammar. DeVitis, Spanish Reader. Crawford, Spanish Composition. Gil Blas.

Six credit hours

ML 23 and 24 Advanced Spanish. Attention will be given to both practical and literary ends. Conversation and composition in Spanish throughout the year. Humphrey's Spanish Prose Composition. During the first half of the year representative plays and novels from the nineteenth century will be read and studied. During the second half either Cervantes' Don Quixote or the dramas of Lope de Vega and Calderon will be studied. Lectures, readings, and reports.

Six credit hours

ITALIAN

ML 41 and 42 Elementary Italian. Study of Italian grammar with oral exercises in elementary composition. Grandgent, Italian Grammar. Easy reading in modern Italian.

Six credit hours

ML 43 and 44 Advanced Italian. Reading of more difficult Italian prose. Dante, La Divina Comedia.

Six credit hours

GERMAN

ML 61 and 62 First Reading Course. The aim of this course is to provide the student with an elementary reading knowledge of the language. Accordingly grammar and pronunciation are taught only so far as they are necessary for this purpose. Haertel & Cast, Elements of German Grammar; Heyse, L'Arrabbiata; Bernhardt, Deutsche Literaturgeschichte; Lessing, Minna von Barnhelm. No credit will be given for less than the full course.

Six credit hours

ML 63 and 64 Second Reading Course. The purpose of this course is to help the student attain ease and accuracy in the reading of more difficult German. Etymology and the formation of words are discussed in so far as these contribute to this purpose. Freytag, Die Journalisten; Scheffel, Der Trompeter von Säkkingen; Eichendorff, Aus dem Leben eines Taugenichts; Schiller, Maria Stuart. No credit will be given for less than the full course.

Six credit hours

ML 65 Language Course. (This course is prerequisite to all courses between 71 and 81 inclusive). Grammar, composition, conversation.

Three credit hours

ML 67 and 68 Reading in Special Subjects. (Prerequisite: ML 64). The purpose of this course is to assist students specializing in other fields to avail themselves of the material published in German in these particular fields. Accordingly, history, chemistry, literature, or whatever other subjects constitute the field of special study of the individual students, will be taken up.

Six credit hours

ML 69 and 70 Individual Assistance in Special Fields. The purpose of this course is to assist students in their individual investigations in other subjects in so far as their material may be in German. Credit will be determined in the case of each student separately according to the amount and nature of his work.

Six credit hours

ML 71 and 73 Goethe. (Prerequisite: ML 65). Conducted mainly in German. [In 1922-1923 ML 73 will be omitted.]

Three credit hours

ML 72 Lessing. (Prerequisite: ML 65). [Omitted in 1922-1923 and 1924-1925.]

Three credit hours

ML 74 Schiller.. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925].

Three credit hours

ML 76 The German Drama since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1923-1924].

Three credit hours

ML 78 German Prose since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925]

Three credit hours

ML 80 German Lyric Poetry since Goethe. (Prerequi site: ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1923-1924].

Three credit hours

ML 81 Middle High German. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1924-1925].

Three credit hours

ML 82 Advanced Scientific German. (Prerequisite: ML 65). [Omitted in 1922-1923 and 1924-1925].

Three credit hours

PHILOSOPHY*

Phil 5 Ethics. The nature of moral experience; the problems of conscience and of group morality; the social origins

*The work of this Department was carried in 1921-22 by Dr. Flaccus and Dr. Smith, of the faculty of the University of Pennsylvania.

or morality; the classification of duties and virtues, etc; the course will consist of two hours of lecture per week and one hour adopted to reports, conferences, quizzes, etc.

DR. FLACCUS *Three credit hours*

Phil 4 History of Philosophy. History of ancient philosophy with special emphasis upon Plato and Aristotle; modern philosophy from the Italian Renaissance to the present time.

DR. SMITH *Three credit hours*

Physics

PROFESSOR HANCOCK

Two distinct series of courses are offered in physics to undergraduates. They differ in the requirements for admission and in the thoroughness of the work.

The first series (1, 2, 3, 4) is designed for those desiring to study physics from a more philosophical than mathematical standpoint in its relation to other sciences and to natural phenomena. It is open to students in the School of Arts and Science and in the School of Agriculture who have attained Sophomore standing.

The second series (5, 6, 7, 8) is designed especially for Engineering students; therefore more stress is placed on the Mathematical work than in the first series. These courses are required of Sophomores in Engineering, but are open to all students offering the required prerequisites.

Ps 1 General Physics. Mechanics and Heat. (Prerequisite: High School Physics or M 3 and 4). This course consists of the fundamental principles of the science and a study of the Mechanics of solids, liquids, and gases, and of Heat. Lectures and recitations. Three hours per week Required of students in Agriculture and in Chemical Engineering and elective for students in Arts and Science.

Three credit hours

Ps 2 General Physics. Electricity and Magnetism, Sound and Light. A continuation of Ps 1. Lectures and recitations. Three hours a week.

Three credit hours

Ps 3 Physical Laboratory. Introduction to instruments and Physical Laboratory methods. Experiments in Mechanics

of solids, liquids, and gases, and in Heat. Must be accompanied or preceded by Ps 1. One three-hour period a week.

One and one-half credit hours

Ps 4 Physical Laboratory. A continuation of Ps 3. Experiments in Electricity and Magnetism, Sound and Light. Must be accompanied or preceded by Ps 2. One three-hour period a week.

One and one-half credit hours

Ps 5 Engineering Physics. (Prerequisites: M 3 and 4). A thorough course in the fundamentals of physics from an Engineering standpoint including the solution of problems on Mechanics and Heat. Lectures and recitations. Five hours a week.

Five credit hours

Ps 6 Engineering Physics. A continuation of Ps 5. Lectures, recitations, and problems on Electricity and Magnetism, Sound and Light. Five hours a week.

Five credit hours

Ps 7 Physical Laboratory. Introduction to Laboratory methods. Experiments in Mechanics of solids, liquids, and gases, thermometry, calorimetry, and thermodynamics. Must be accompanied or preceded by Ps 5. One three hour period a week.

One and one-half credit hours

Ps 8 Physical Laboratory. A continuation of Ps 7. Experiments in Electricity and Magnetism, Sound and Light. Given in connection with Ps 6. One three-hour period a week.

One and one-half credit hours

Ps 10 Advanced Physics. A second course in Physics offered to properly qualified students in any department. Lectures, recitations, problems, and laboratory work.

Three and one-half credit hours

School of Agriculture

SCOPE OF THE WORK

The course in the School of Agriculture combines a technical course in Agriculture with as much cultural training as possible. Agriculture is viewed as applied science and the course is planned to give the student a broad foundation in the fundamental sciences which underlie modern Agricultural practice.

The aim of the course is so to train and develop men that they may become leaders in the great field of Agriculture, and thus become a valuable asset in the life of the state and the nation.

REQUIREMENTS FOR GRADUATION

Candidates for graduation are required to complete 138 credit term-hours of work in addition to Military Science.* All Agricultural students will be required to spend at least six months, or their equivalent, before the Senior year, in practice work on a farm. All candidates for a degree in Agriculture must pass an examination in farm practice before December 1 of the Senior year.

Candidates for a degree in Agriculture must at the beginning of the second term of the Junior year register with the Dean of Agriculture as students majoring in Agronomy, Animal Husbandry, Horticulture, or Vocational Agricultural Education. A minimum of 25 credit term-hours must be taken in the department in which the student is majoring, except in Vocational Education, where 15 credits are required. The student should consult with the head of

*Beginning with the class of 1926, all students will be required to take three hours per week in Physical Education.

the department in which he is taking his major work, regarding his selection of elective subjects during his Junior and Senior years.

Except by special permission from the Dean of Agriculture, Sophomores, Juniors, and Seniors will not be allowed to take in any one term more than 20 credit hours, and Freshmen not more than 18 credit hours, exclusive of Military Science.

In addition to fulfilling these specific requirements, candidates for graduation must obtain sixty honor points, to be estimated on the basis of two points for the grade of A in a one-credit-hour course, and one point for the grade of B in a one-credit-hour course.

PRESCRIBED STUDIES

	Credits
English 1, 2, 3, and 4	10
Biology 1, 2, 7, and 8	12
Chemistry 11, 12, 13, 14, 21, 22, 23, and 26	21
History 3, and 21	4
Business 1	3
Bacteriology 1 and 2	6
Physics 1 and 3	4.5
Plant Pathology 2; or Hygiene 2	3
Farm Management Agri. 6	3
Genetics, Hort. 33	3
Agronomy 1, 4, and 5	11
Animal Husbandry 17, 18, and 19	9
Horticulture 16, 17, and 18	9
Seminars	2
Vocational Education 2	2
Mathematics 18	2

Elective Studies

Agricultural Subjects	16
Free Electives	18.5
Total	138

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN AGRONOMY

	1st Term	*2d Term*
Agronomy 2		2 hr.
Agronomy 3	2 hr.	
Agronomy 7	2 hr.	
Agronomy 8		2 hr.
Agronomy 9	3 hr.	
Agronomy 10		2 hr.
Agronomy 11 and 12	1-3 hr.	1-3 hr.
Plant Pathology 2		3 hr.
Soil Bacteriology 2		3 hr.
Biology 9 and 10	2 hr.	2 hr.
Biology 5 and 6	2 hr.	2 hr.
English 41 and 42	1 hr.	1 hr.
Modern Language 1 and 2, or 3 and 4	3 hr.	3 hr.
History 22		3 hr.
Education 3	3 hr.	
Psychology 1	3 hr.	

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN ANIMAL HUSBANDRY

	1st Term	*2d Term*
Agronomy 2		2
Agronomy 9	3	
Animal Husbandry 21	3	
Animal Husbandry 22	2	
Animal Husbandry 23	3	
Animal Husbandry 24		3
Animal Husbandry 25	1	
Animal Husbandry 27	1	
Animal Husbandry 28		3
Animal Husbandry 30		1
Animal Husbandry 34		2
Bacteriology 3	3	
Biology 9 and 10	2	2
Hygiene 2		3
Physiology 1 and 2	3	3

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN HORTICULTURE

	1st Term	*2d Term*
Agronomy 9	3	
Biology 7 and 8	2	2
English 13 and 14	1	1
Geology 32		2
History 22		3
Horticulture 19	3	
Horticulture 20		3
Horticulture 23	3	
Horticulture 24		3
Horticulture 26		3
Horticulture 31	1½	
Horticulture 32		1½
Horticulture 21	3	
Horticulture 29	3	
M L 1 and 2 or M L 3 and 4	3	3
Plant Pathology 2		3
Soil Bacteriology 2	3	

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Biology, 7	5	3	Biology, 8	5	3
Chemistry, 11	2	2	Chemistry, 12	2	2
Chemistry, 13	3	1	Chemistry, 14	3	1
Agronomy, 1	6	4	Horticulture, 16	4	3
Animal Husb'dry, 17	4	3	Animal Husb'dry, 18	4	3
	23	16	Mathematics, 18	2	2
Military Science, 1	3	1.5		23	17
	26	17.5	Military	3	1.5
				26	18.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
History, 3	1	1	Chemistry, 22	3	3
Chemistry, 21	3	3	Chemistry, 26	7	3
Physics, 1, 3	6	4.5	Agronomy, 4	6	4
Horticulture, 17	4	3	Horticulture, 18	4	3
Animal Husb'dry, 19	4	3	Elective	4	3
Elective	3	3		26	18
	23	19.5	Military, 4	3	1.5
Military, 3	3	1.5		29	19.5
	26	21.0			

JUNIOR YEAR

First Term	H.	C.
Business, 1	3	3
Bacteriology, 1	5	3
Horticulture, 33	3	3
Biology, 1	5	3
Agronomy, 5	5	3
Elective	5	3
	24	18
Military	3	1.5
	27	19.5

Second Term	H.	C.
Vocational Education, 2	3	3
Bacteriology, 2	5	3
Plant Pathology, 2 or Hygiene, 2	5	3
Biology, 2	5	3
Elective	6	6
	24	18
Military, 6	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
History, 21	3	3
Seminar	2	1
Elective	14	14
	19	18
Military, 7	3	1.5
	22	19.5

Second Term	H.	C.
Agronomy, 6	5	3
Seminar	2	1
Elective	14	14
	21	18
	3	1.5
	24	19.5

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Agronomy

PROFESSOR SCHUSTER AND ASSISTANT PROFESSOR RUNK

Agronomy is the science of the soil and what it produces. The soil is studied with reference to its influence upon plant growth. The fundamental principles of soil management for crop production are especially emphasized. The study of soils presupposes a fair understanding of the principles of physics, chemistry, and biology. The courses in soils are designed to equip the future farmer with a complete knowledge of his soil, and also to give adequate training to students who desire to specialize in soils.

Field crops, the products of the soil, are studied from the standpoint of adaptation and improvement. The study of Field Crops presupposes a general knowledge of Botany. A special attempt is made to adapt the work to the young man who wishes to apply scientific principles of field crop culture and improvement on the farm.

This Department also offers courses in Agricultural Engineering and Farm Management. Agricultural Engineering deals with buildings, machinery, power, drainage, fencing, rural heating, lighting, plumbing and sewage disposal.

The aim of the farm management courses is to assist the student to perceive the just relationship of the several factors of production and distribution as applicable to local conditions, and to develop in him executive and administrative capacity.

Students who major in the Department of Agronomy should be well fitted for general farming, investigational work in the Experimental Stations, and County Agricultural Agent work.

The Department of Agronomy has large well-lighted laboratories in Wolf Hall for use in the study of crops and soils as well as ample greenhouse space. Thirty acres of the Experimental farm are devoted to experimental and research work in Agronomy and the results are used to supplement class and laboratory work. Students in Farm Management are required

to visit farms of each of the leading types in the State, viz: Dairying, Horticulture, and General Farming.

Agr 1 Field Crops. A general introductory course dealing with the culture and marketing of field crops. Attention is given to the judging of corn, wheat, and oats, with a study of the market classes and grades of the same. Various types and varieties of grasses and leguminous crops that are used for hay and pasture are discussed. Required of all Freshmen in Agriculture. Three lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Four credit hours*

Agr 2 Cereals. (Prerequisites: Agr 1, B 7 and 8). An advanced course in Cereal crop production, elective for Juniors and Seniors. One lecture and two laboratory hours.

ASSISTANT PROFESSOR RUNK *Two credit hours*

Agr 3 Forage Crops. (Prerequisites: Agr 1, B 7 and 8). An advanced course in Forage crop production, elective for Juniors and Seniors. One lecture and two laboratory hours.

ASSISTANT PROFESSOR RUNK *Two credit hours*

Agr 4 Elementary Soils. (Prerequisites: Chem 11, 12, 13, 14, 21 and 23; Ps 1 and 3). A study of the origin, formation, classification, function of soils, and relation to plant life. The question of soil management in relation to tillage, drainage, and fertility is taken up. Required of Sophomores in Agriculture. Three lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Four credit hours*

Agr 5 Soil Fertility. (Prerequisites: C 22, 26; Agr 4). A further study of the principles developed in Agronomy 4. The ultimate effect of various rotations and different systems of farming on the fertility of the soil is studied and attention is also given to the conditions of Delaware. Likewise study is made of the use of manures, fertilizers, and amendments with a comparison of their Agricultural and Commercial value for different crops. Required of Juniors in Agriculture. Two lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 6 Farm Management. This course is designed to summarize the student's agricultural training and experience

and apply it to the efficient management of the farm as a whole. The organization of the farm as a business enterprise, its arrangement with reference to size and shape of field; systems of crop and livestock management; the relation of fixed to circulating capital; the relation of labor to income; farm accounts, etc. Required of all Seniors in Agriculture. Two lectures and three laboratory hours.

PROFESSOR SCHUSTER *Three credit hours*

Agr 7 Advanced Soils. (Prerequisites: C 26, Agr 5). A study of soil classification covering character, extent, etc., of provinces, series, and types in the United States. A field study of the methods of mapping soils and practice in soil mapping is given. The effect upon crops of different fertilizers added to the soils that are mapped is determined by pot experiments. Assigned readings are made. Elective for Seniors in Agriculture. One lecture and one four-hour laboratory period.

PROFESSOR SCHUSTER *Two credit hours*

Agr 8 Plant Breeding. (Prerequisites: Agr 1, 2, 4, Hort 33). The improvement and breeding of field crops including the grains, grasses, and legumes; selection; results obtained by various investigators. Lectures, assigned reading, demonstrations, and laboratory work. Elective for Juniors and Seniors in Agriculture. One lecture and two laboratory hours.

Two credit hours

Agr 9 Farm Equipment. This course takes up a study of the design, construction, and cost of farm buildings; the adaptability, efficiency, construction, operation, and durability of farm machinery, motors, gasoline engines and tractors; sewage disposal, water supply, and lighting systems. Elective for Juniors and Seniors in Agriculture. Two lectures and one three-hour laboratory period.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 10 Methods of Field Experimentation. (Prerequisites: Agr 1, 2, 4, 5, 7 and 8). A course designed for students intending to take up Experiment Station work. Methods of plotting land for soil and crop experiments; check systems; interpretation of results. The literature of this and other countries pertaining to experimental work will be carefully studied. Elec-

tive for Seniors in Agriculture. One lecture and two laboratory hours.

Two credit hours

Agr 11 and 12 Thesis and Seminar. Original work on an approved subject of investigation. Required of all Seniors who Major in Agronomy. Credit hours adjusted to time given to work.

Animal Husbandry

PROFESSOR BAKER AND MR. TOMHAVE

The courses in the Department of Animal Husbandry are designed to familiarize the student with the fundamental principles underlying animal production and to associate these principles with modern practice. In all of the general courses special emphasis is laid on the economic aspects of this important industry and an effort is made to show the student the place of Animal Husbandry in the general farm scheme of the South Atlantic States. Instruction in the classroom and laboratory is supplemented by work with the live stock on the College Farm and by visits to the many flocks, herds, and studs of Delaware and Pennsylvania. The college maintains a herd of about fifty head of dairy cattle, which is available for practice in judging and herd management. Fine specimens of various breeds of horses, sheep, and swine are also owned by the college. An effort is being made to secure vacation employment for all students specializing in this department, as practical work under actual farm conditions is considered an essential part of the training.

AH 17 Types and Market Classes of Farm Animals. A study of the development of the types of horses and hogs, and of the characteristics of the breeds within the types. The market classes are discussed in detail and lantern slide lectures will be given to illustrate both types and market classes. Laboratory practice in judging will be conducted regularly at the College Farm. The selection of desirable breeding stock is given especial attention. Two lectures and two laboratory hours per week. Freshman year.

Three credit hours

AH 18 Types and Market Classes of Farm Animals. (Prerequisite: AH 17). A continuation of AH 17 embodying the study of types, breeds, and market classes of cattle and sheep.

This course includes a two-day trip thru northern Delaware and southeastern Pennsylvania for the purpose of visiting several well-known breeding establishments. Two lectures and two laboratory hours per week. Freshman year.

Three credit hours

AH 19 Feeding Farm Animals. (Prerequisites: C 11, 12, 13, 14, 21, 23). The objects of this course are threefold: (1) To teach the fundamental principles underlying the practice in feeding farm animals. (2) To teach as much as possible concerning the source, composition, and usefulness of the feeds commonly used in this country. (3) To teach the practice of feeding itself, so far as practice can be taught in lecture and laboratory with occasional visits to the barns.

A great many problems are given the student to solve and reports on assigned readings are required weekly—a very fundamental course for successful farm operations.

Two lectures and two laboratory hours per week. Sophomore year.

Three credit hours

Courses Required of Students Specializing in Animal Husbandry

AH 22 Advanced Judging. (Prerequisites: AH 17 and 18). This course is a continuation of the judging work given in connection with AH 17 and 18. It is the aim of the course to give the student an intensive drill in judging so that he may be qualified for professional work at fairs. Men representing the college in judging contests will be chosen from this class. The very best class of material will be selected for the student to work with and many excellent stock farms within a radius of fifty miles will be visited. Lectures and criticism will be given in connection with the practicums. Four laboratory hours per week. Junior year.

Two credit hours

AH 24 Animal Breeding. (Prerequisites: AH 17, 18; Ps 1, 3; Hort 33; B 1, 2). This course presupposes a knowledge of the foundation principles and the various theories of heredity as presented in the course in Genetics (Hort 33). It will be

the aim of this series of lectures to correlate these principles and theories with the established practices of breeding farm animals. The various systems of breeding, including grading, cross breeding, line breeding, and inbreeding, will be considered in detail.

A considerable portion of the course will be devoted to the physiology of reproduction and the causes of sterility.

Three lectures per week. Junior year.

Three credit hours

AH 25 Animal Nutrition. (Prerequisites: AH 17, 18, 19; C 11, 12, 13, 14, 21, 23). The aim of this course is to give the student a thoro study of the chemistry of the feeding problem. All of the recent literature dealing with the specific effects of amino acids upon the maintenance and growth of animals will be reviewed. The vitamine theory and the requirements of animals for mineral compounds will be discussed. It is intended that by taking this course the student may be enabled to read intelligently the current scientific periodicals which pertain to this important science. One lecture per week. Senior year.

One credit hour

AH 27 Seminar. A weekly conference with Senior students in Animal Husbandry. Reviews of current literature and recent experimental work will be made by each student and this material will be discussed at the lecture hour. Each student is required to prepare a term paper covering in detail some phase of research work. Senior year.

One credit hour

AH 28 Pedigree Study. (Prerequisites: AH 17, 18, and 24). A series of lectures will be given covering the general history of breeding types of pedigrees, and all of the fundamental questions relating to the determination of animal values, based upon their ancestry. Practice in the compilation of extended pedigrees will be given in connection with the laboratory work. The Agricultural library includes a large collection of herd, stud, and flock books which are available for student use. Two lectures and two laboratory hours per week. Senior year.

Three credit hours

AH 30 Seminar. A continuation of AH 27.

One credit hour

ELECTIVE SUBJECTS

AH 21 Dairy Technology. Due to the fact that there are very small amounts of milk products manufactured in Delaware, there is no demand for specialized courses in this subject. This course covers in a general manner the analysis of all dairy products, special tests for adulteration, methods of preparing starter, and the manufacture of soft cheese. Practice will also be given in the adjustment and operation of cream separators. An inspection trip will be made to some of the creameries and milk distributing plants in the vicinity of Wilmington. Two lectures and two laboratory hours per week. Open to all students.

Three credit hours

AH 23 Dairy Cattle Management. (Prerequisites: AH 17, 18, 19). This is a very practical course including the fundamental principles of dairy farm husbandry. The lectures include questions of feeding, breeding, management, sales, advanced registry testing, methods of successful practice, cost of milk production, etc. Barn plans, methods of record keeping, registration, and the scoring of barns and milk houses are considered in the laboratory periods. Practical work is also given the student in stable management and in the operation of milking machines. Two lectures and two laboratory hours per week. Junior year.

Three credit hours

AH 32 Thesis. Senior year.

AH 34 Horse, Swine, Sheep, and Beef Cattle Problems. (Prerequisites: AH 19 and 24). This course is made up of a series of lectures accompanied by text-book assignments. Present-day problems in horse, swine, sheep, and beef cattle farming will be presented in such a way as to be of direct benefit to the student who expects to undertake the management of a live-stock farm. The course will be modified somewhat to meet the needs of the students enrolled. A systematic course of reading is required of each student in connection with this course

and an abstract of the material covered must be submitted at the close of the term. One credit hour is given for this outside work. Three lectures per week. Senior year.

Two credit hours

Bacteriology, Physiology, and Hygiene

PROFESSOR PALMER AND MR. HITCHNER

Ba 1 and 2 General Bacteriology. Required of Juniors.
MR. HITCHNER *Six credit hours*

Ba 3 Advanced Bacteriology. (Prerequisite: Ba 1 and 2). Elective for Seniors.
PROFESSOR PALMER *Three credit hours*

Phy 1 General Physiology. Required of Juniors specializing in Animal Husbandry.
PROFESSOR PALMER *Three credit hours*

Phy 2 Advanced Physiology. (Prerequisite: Phy 1). Elective for Juniors and Seniors.
PROFESSOR PALMER *Three credit hours*

Phy 2 Animal Hygiene and Pathology. Required of Juniors specializing in Animal Husbandry.
PROFESSOR PALMER *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Biology

PROFESSOR HOUGHTON AND MR. HITCHNER

B 1 and 2 Elementary Zoology. Required of Juniors.
PROFESSOR HOUGHTON *Six credit hours*

B 3 and 4 Systematic and Economic Zoology Elective for Seniors.
PROFESSOR HOUGHTON *Four credit hours*

B 5 and 6 Economic Entomology. Required of students specializing in Horticulture.
PROFESSOR HOUGHTON *Four credit hours*

B 7 and 8 General Botany. Required of Freshmen.
MR. HITCHNER *Six credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Chemistry

PROFESSOR PENNY AND ASSOCIATE PROFESSOR TIFFANY

C 11 and 12 Inorganic Chemistry. Required of Freshmen.
PROFESSOR PENNY *Four credit hours*

C 13 and 14 Qualitative Analysis. Required of Freshmen.
PROFESSOR TIFFANY *Three credit hours*

C 21 and 22 Organic Chemistry. Required of Sophomores.
PROFESSOR PENNY *Six credit hours*

C 26 Agricultural Analyisis. Required of Sophomores.
Three credit hours

For a detailed statement of courses in this department, see School of Arts and Science.

Economics and Business Administration

PROFESSOR HARRIS

Bus 1 Elementary Economics. Required of Juniors.
PROFESSOR HARRIS *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Education, Psychology, and Sociology

PROFESSOR WILKINSON

Ed 3 Principles of Education. Required of students specializing in Vocational Education.
PROFESSOR WILKINSON *Three credit hours*

Psy 1 Introduction to Psychology. Required of students specializing in Vocational Education.
PROFESSOR WILKINSON *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. VAN KEUREN, AND MR. BLAIR

E 1 and 2 Composition. Required of Freshmen.

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. VAN KEUREN, AND MR. BLAIR *Six credit hours*

E 3 and 4 Literature. Required of Sophomores.

ASSOCIATE PROFESSOR FOSTER *Four credit hours*

E 13 and 14 Composition. Elective for Seniors.

PROFESSOR DUTTON *Two credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

History and Political Science

PROFESSOR VAUGHN

H 3 History and Government of Delaware. Required of Sophomores.

PROFESSOR VAUGHN *One credit hour*

H 21 American Government. Required of Seniors.

PROFESSOR VAUGHN *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Horticulture

PROFESSOR MCCUE, PROFESSOR DETJEN, AND MR. CLARK

Courses 16, 17, 18, and 33 are required of all students in Agriculture. A student specializing in Horticulture will be expected to take nearly all the courses offered by the Department. Students who major in Horticulture are expected to elect courses 5 and 6 in Biology, and course 2 in Plant Pathology.

The college is very fortunately located for the study of Horticulture. The fruit and vegetable growing centers of the State are easily accessible. Many famous fruit and truck growing districts in neighboring states are distant but a few hours' ride. The cold storage houses and the large markets of Philadelphia can be reached in an hour's time, and a famous

greenhouse district of Pennsylvania lies only a few miles north of Newark. The earnest student will have many opportunities to see the practical growing, harvesting, and marketing of Horticultural crops.

Hort 16 Plant Propagation. (Prerequisites: B 7 and 8). This course embraces a discussion of the principles and practices of the multiplication of plants. It includes a study of spores, seeds, stratification, and seedage; buds, bulbs, roots, rhizomes, tubers; cuttings of leaves, stems, and roots; herbaceous, soft wood and hardwood cuttings; layerage; grafting waxes and the principal method of grafting; the establishment and handling of nurseries; a discussion of the various stocks that are used in the propagation of fruit trees and their adaption. Required of all Freshmen in Agriculture. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 17 Pomology. (Prerequisite: Hort 16). A general course in fruit growing especially designed to meet the needs of the average student who does not care to enter into detailed problems of fruit growing or more technical phases of commercial orcharding. It embraces all of the principles and practices that are essential and necessary in the growing of an orchard, its care and management. It includes such a variety of subjects as choosing a location and site for a fruit farm, the choosing of varieties, the planting of an orchard, pruning, spraying for diseases and insects, cultivation, fertilization, cover crops, rejuvenation of old orchards, harvesting, storing and marketing of fruit. Required of all Sophomores in Agriculture. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 18 Vegetable Gardening. (Prerequisite: Hort 16). A study of all garden vegetables with especial emphasis laid on the principal trucking crops. The course includes a study of the location of the farm, the best garden and truck crops, the various vegetables from the standpoint of relationship, type, habit of growth, requiremnts, seeding, culture, harvesting, storing and marketing. A study in the construction and management of flats, hot-beds and cold-frames, the sowing of seeds, watering, transplanting, spraying and protecting the plants

from the numerous fungus and insect pests. The growing of vegetable seeds for home use and market also receives attention. Each student is required to plan, seed, and operate a small garden on the college grounds in order to become better acquainted with the principles and problems of vegetable gardening. Required of all Sophomores in Agriculture. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 19 Forestry. (Prerequisites: B 7 and 8). An elementary course in Forestry especially designed to meet the requirements of Agricultural students who may be interested in the conservation of forests and wood lands. The course embraces a study of forest trees of the United States, their character, value, and method of dissemination; the establishment and maintenance of a forest; a study of the most approved methods of handling our forests and wood lands from the standpoint of protection, yield, and reproduction; forest mensuration; forest fires, their nature, prevention, and control. Elective for Juniors and Seniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 20 Pomology. (Prerequisites: Hort 16 and 17). A course designed to meet the demands for commercial orcharding. Especial emphasis is laid on the pruning of trees, fertilization problem, and the spraying of orchard crops. This course includes a study of the various systems and methods of pruning trees, shrubs and vines, wound dressings and protection, orchard rejuvenation, history of sprays and spraying, a study of the various insecticides, fungicides, spray pumps and the various kinds of nozzles, time and manner of spraying the horticultural crops for the various insects and fungus diseases. Elective for Juniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 21 or 22 Landscape Gardening. (Prerequisites: B 7, 8; Hort 16). This course is designed to encourage a wider use of our native and ornamental trees, shrubs, vines and flowers in the home grounds both rural and urban and in the designing

of public parks, schoolgrounds, and highways. It distinguishes between the several kinds of landscape art, between the formal and the informal styles of gardening. It embraces a discussion of the laws that govern the planting of trees, shrubs, vines, herbaceous perennial and annual plants; the construction of walks, driveways, lawns, and their maintenance. First or second term. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 23 Advanced Pomology. (Prerequisites B 7, 8; Hort 16, 17, and 20). This course consists of more detailed discussion of all phases of commercial orcharding. Especial emphasis is laid on orchard management, harvesting, storing and marketing. Elective for Seniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 24 Breeding of Horticultural Plants. (Prerequisites: Hort 16, 17, 18, and 33). A study of the application of the laws of heredity to economic horticulture. The course includes a study of the more recent methods and developments in plant breeding. Elective for Juniors in Agriculture. Three recitations.

PROFESSOR MCCUE *Three credit hours*

Hort 25 or 26 Small Fruits. (Prerequisites: Hort 16 and 17). A discussion of the commercial production of strawberries, raspberries, gooseberries, currants, and grapes. The course also includes a discussion of the origin and history of the more important varieties. Elective for Juniors and Seniors in Agriculture. First or second term.

PROFESSOR DETJEN *Three credit hours*

Hort 29 Systematic Pomology. (Prerequisites: Hort 17 and 20). A study of the systematic relationship of the cultivated fruits of the United States. Identification, description, and judging of the common commercial varieties of apples, pears, plums, grapes, and peaches grown in America. Elective for Seniors in Agriculture. One recitation and four laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 31 and 32 Horticultural Seminar. A discussion of principles and practices of horticulture and a study of horticultural literature, both past and present, and current events of horticultural interest. Required of all Senior students majoring in Horticulture.

PROFESSOR DETJEN *Three credit hours*

Hort 33 Genetics. (Prerequisites: B 7 and 8). A brief course discussing the fundamental principles and the various theories of heredity. Required of Juniors in Agriculture and elective for Juniors and Seniors in Arts and Science. Three recitations.

PROFESSOR MCCUE *Three credit hours*

Mathematics

ASSISTANT PROFESSOR REES

M 18 A short course in mathematics designed for Agricultural students. Required of Freshmen.

Two credit hours

Military Science and Tactics

MAJOR ROW, CAPTAIN MACKENZIE, AND CAPTAIN SPARKS

Mil 1 and 2 Required of Freshmen.

Three credit hours

Mil 3 and 4 Required of Sophomores.

Three credit hours

Mil 5 and 6 Required of Juniors.

Three credit hours

Mil 7 and 8 Required of Seniors.

Three credit hours

For a detailed statement of courses in this department, see School of Arts and Science.

Physics

PROFESSOR HANCOCK

Ps 1 Mechanics, Heat, and Sound. Required of Sophomores.

PROFESSOR HANCOCK *Three credit hours*

Ps 3 Physical Laboratory. Required of Sophomores.

PROFESSOR HANCOCK *One and one-half credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Plant Pathology

PROFESSOR MANNS

Pl Path 2 Plant Pathology. (Prerequisites: B 7 and 8; Ba 1 and 2). An elementary course covering the principal bacterial and fungous diseases of the more important economic plants, with special emphasis on orchard and truck diseases. Students will be expected to learn to recognize the more important diseases and to prescribe treatment. Considerable attention will be given to manner of disease distribution, overwintering, and the possible methods of control. Some time will be devoted to isolating and culturing parasitic bacteria and fungi. A study will be made of the commercial sprays, fungicides, and disinfectants used in control of plant disease. Special emphasis will be placed on spraying programs for the control of the diseases of apple, pear, peach, grape, and truck crops, including canteloupes, potatoes, tomatoes, and cabbage; disinfectants for the diseases carried by cereals, white potatoes, and sweet potatoes will be reviewed. Several trips will be made into different districts to study diseases under field conditions. Each student will be required to make and properly label a collection of 25 disease specimens.

Elective for students in Arts and Science and required of Horticultural Juniors in Agriculture. One hour lecture and four hours laboratory. Second term.

Three credit hours

Soil Bacteriology

PROFESSOR MANNS

S B 2 Soil Bacteriology. (Prerequisites: Bacteriology 1, 2; Chemistry 26). The course covers a study of the economic importance of the invisible but highly active soil organisms. These organisms, the bacteria, fungi, and protozoa, have been shown in recent years to play an active part in soil fertility and soil sanitation. A study will be made of their work in relation to ammonification, nitrification, and denitrification; the influence of cropping and tillage on the flora and health of the crop; the economic use of fertilizers and lime; bacteria in relation to the fixation of nitrogen by legumes.

The laboratory work will consist of a quantitative and qualitative study of the types of flora, i. e., the ammonifiers, nitrifiers, nodule organisms, and some parasitic fungi from sick soils; measuring the rate of nitrification, fixation of atmospheric nitrogen, and ammonification in different soils variously manured. A brief study will be given to cereal-carried diseases which bring about sick soil conditions.

Elective for Seniors in Arts and Science and Seniors in Agriculture. One hour lecture and four hours laboratory. Second term.

Three credit hours

Vocational Agricultural Education

PROFESSOR HEIM

The department of Vocational Agricultural Education has as its aim the preparation of high school teachers of Agriculture under the Smith Hughes Act of 1917, and is supported by Federal appropriations supplemented by State appropriations.

The courses are arranged in accordance with certain requirements set up by the State Board for Vocational Education and approved by the Federal Board for Vocational Education. Students completing the courses are entitled to be certified for teaching vocational agriculture in any secondary school.

The classroom and laboratory instruction is supplemented by observation and practice teaching in state and federally aided approved schools of the State. Several visits to vocational schools of adjoining States will also be required during the Senior year.

A student preparing for vocational teaching will be required to take all the courses offered by this department and have at least two years of practical farm experience.

V A E 1 Vocational Education. (Prerequisites: Ed 32 and Psy 31). This course is designed to acquaint prospective high school teachers of vocational agriculture with the entire field of Vocational Education. The following topics will be emphasized: The history and development of Vocational Education from the early middle ages down to the present time; Meaning and social need of Vocational Education; The relation of Vocational Education to General Education; Principles of Method; Vocational Education for the Agricultural callings; Commercial Education; Industrial Education; Vocational Homemaking Education; Professional Education; The administration of Vocational Education; Training of Vocational Teachers; Special problems; Future problems; State and Federal Laws on Vocational Education; Probable Economic future of American women; Practical arts in General Education, etc. Junior year.

Three credit hours

V A E 2 Rural Sociology. (Prerequisite: for students specializing in vocational education, V A E 1). This course contemplates a study of rural social conditions with especial reference to physical and occupational environment; Types of communities as results of the differentiating effects of environment; Rural and urban increase; Advantages and disadvantages of farm life; Improvement of agricultural production, business, transportation, and communication; Rural health, recreation, and sanitation; Community meetings; Social aspects of land and labor; Making farm life more attractive; Reading matter in rural homes and country life literature; Socialization of country life; Rural social institutions and their improvement; The school and the church and their relation to the community; The grange and other rural organizations; Rural charity and correction; Rural surveys and many other social agencies thru which changes may be effected. Junior year.

Three credit hours

V A E 3 Teaching Vocational Agriculture. Special Methods. (Prerequisites: V A E 1 and 2). The application of the

principles of education to the problems of vocational teaching and practice. Among the topics considered are a study of the purposes of vocational agriculture; selection of subject matter suited to local conditions; community surveys; agriculture in the curriculum; laboratory, field, and home exercises; visual instruction; preparation of home project outlines and plans; project supervision; laboratory and library equipment; use and management of school plot; preparation of lesson plans; community activities; ethics of the teaching profession; professional improvement of teachers, etc.

The laboratory period will be used for the preparation of teaching material and for working out individual assignments connected with the course. Two hours recitation and two hours laboratory. Senior year.

Three credit hours

V A E 4 Observation and Practice Teaching. (Prerequisites: V A E 1, 2 and 3). The object of this course is to give students a knowledge of the best educational practices with respect to methods of teaching vocational agriculture in secondary schools, and to offer opportunity to put those methods into practice. Students are required to visit approved High Schools where Agriculture is taught in this and adjoining states before being given an opportunity to put methods studied in V A E 3 into practice in a school-room. A minimum of five hours of observation and practice teaching is required for certification. Senior year.

Two credit hours

V A E 5 Seminar. In order to keep abreast of the times, a weekly conference is held to study present-day literature dealing with Vocational Education and current events of vocational interest. Outside speakers are called in to assist in the discussion from time to time. Students enrolling for credit will select special subjects for study and will report progress from time to time. Senior year.

One credit hour

School of Engineering

SCOPE OF THE WORK

The School of Engineering offers instruction in Chemical, Civil, Electrical, and Mechanical Engineering. Upon the satisfactory completion of the work offered by any of the Divisions of Engineering the student receives the degree of Bachelor of Science (B. S.).

The work given in the Engineering School comprises the essentials of a liberal education in addition to a thorough grounding in the fundamental principles of those branches of engineering which are offered in the School.

The curricula of the School consist almost entirely of required subjects, few electives being offered. By the adoption of this policy a maximum concentration of effort on the part of both the students and the faculty is made possible. All studies which are included in the curricula are considered essential to the training of an educated engineer.

In addition to fulfilling the specific requirements for graduation as laid down in the statements of the four Divisions of Engineering, candidates for graduation must also attain sixty honor points, to be estimated on the basis of two points for the grade of A in a one-credit-hour course and of one point for the grade of B.*

*Beginning with the class of 1926, all students will be required to take three hours a week in the Department of Physical Education.

Division of Chemical Engineering

The Chemical Engineering curriculum is designed to prepare students for work in Chemistry as applied in the various industries. Besides the fundamental branches of inorganic, organic, and analytical Chemistry, it includes Chemical Calculation, Electrochemistry, Theoretical and Physical Chemistry, Synthetic Organic Chemistry, and the more important processes of manufacturing and industrial Chemistry; also some important branches of Mechanical and Electrical Engineering, and subjects of general educational value such as Mathematics, Physics, and Language.

During the Junior and Senior years students in charge of a member of the faculty visit various industrial plants in order to supplement the class-room instruction with an inspection of the apparatus and processes used in practice.

The subjects studied in the last two years are particularly useful in the industries. In addition to pure mathematics, much attention is given to the mathematics of chemistry. The calculations made in analysis and in chemical industries are studied carefully both in special courses known as "calculations" and in gas analysis, electrochemistry, and physical chemistry. The student solves problems involved in reactions and processes, and afterwards discusses them in the class-room.

A laboratory course of six hours weekly is given in "organic preparations." This covers the making of many of the more important organic substances, including some of the simpler dyes.

The methods of analyzing illuminating gas and flue gases are studied, and the analyses are made by the students under the direction of an instructor in the laboratory; the economic relations of the gas analyses to heat production and fuel consumption are studied by means of problems and mathematical calculations.

Particular attention is given to the more important manufacturing and industrial processes, the materials used and the products, such as general processes and apparatus, water for industrial purposes, fuels, destructive distillation, iron, steel, and alloys, ceramics, cements, paints and varnishes, fertilizers, acids, alkalies, chlorine and bleach, oils and fats, paper, textiles and the like. Visits are made by the students to manufacturing plants.

In the Senior year students of chemical engineering undertake an original investigation on some assigned subject, and prepare a thesis reporting the results and conclusions reached.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4, or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 16	6	2
Chemistry, 15	6	2	Mech. Engineering, 22	3	1.5
Mech. Engineering, 21	3	1.5			
	22	16.5		21	15.5
Military Science, 1	3	1.5	Military Science, 2	3	1.5
	25	18		24	17

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Modern Language, 5, or 65	3	3	Modern Language, 6 or 66	3	3
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 1	3	3	Physics, 2	3	3
Chemistry, 21	3	3	Chemistry, 22	3	3
Chemistry, 23	6	2	Chemistry, 24	6	2
	21	17.0		21	17.0
Military Science, 3	3	1.5	Military Science, 4	3	1.5
	24	18.5		24	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Chemistry, 31	3	3
Chemistry, 35	6	2
Chemistry, 37	3	1
Geology, 31	2	2
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Engineering, 1	3	3
	27	19.5
Military Science, 5	3	1.5
	30	21

Second Term	H.	C.
Mathematics, 12	4	4
Chemistry, 32	3	3
Chemistry, 36	6	2
Geology, 32	2	2
Elec. Engineering, 2	3	3
Elec. Engineering, 42	3	1.5
Mech. Engineering, 2	3	3
	24	18.5
Military Science, 6	3	1.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Chemistry, 31	3	3
Chemistry, 41	3	3
Chemistry, 43	3	3
Chemistry, 47	12	4
Mech. Engineering, 3	2	2
	24	16
Military Science, 7	3	1.5
	27	17.5

Second Term	H.	C.
English, 8	1	1
Chemistry, 32	3	3
Chemistry, 42	3	3
Chemistry, 44	5	3
Chemistry, 50	9	3
Mech. Engineering, 4	2	2
	23	15
Military Science, 8	3	1.5
	26	16.5

Division of Civil Engineering

The Division of Civil Engineering provides instruction, by means of recitation, lecture, drawing room, laboratory, and visits of inspection, in the subjects which are essential in either highway, railroad, municipal, structural, or concrete engineering. A thorough preparation in mathematics and mechanics is necessary to an understanding of the applied subjects in civil engineering; the work of the first two years is therefore largly given over to the study of these and other fundamental subjects. In the last two years subjects more closely allied to the work of the civil engineer make up a major portion of the work.

The laboratories of the division provide the means for a first-hand study of the behavior of materials under stress. The general testing laboratory is equipped with machinery for testing materials in shear, tension, compression, bending, and torsion; and other apparatus is available for testing cement, sand, and concrete. The recent addition of a number of machines for testing road materials provides the means for testing road building rock and paving brick.

A summer school in surveying is held for a period of two weeks at the end of both the Freshman and Sophomore years, at which attendance is required of civil engineering students.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
History, 3	1	1	Modern Language, 4, or 64	3	3
Modern Language, 3, or 63	3	3	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Enginee'ng, 22	4	2.5
Mech. Enginee'ng, 21	3	1.5	Mech. Enginee'ng, 22	3	1.5
Mech. Enginee'ng, 57	3	1	Mech. Enginee'ng, 58	3	1
	22	16.5		25	18

Military Science, 5 ..	3	1.5	Military Science, 6 ..	3	1.5
	25	18		28	19.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Physics, 7	3	1.5	Physics, 8	3	1.5
Civil Engineering, 23	4	3	Civil Engineering, 24	4	3
Mech. Enginee'ng, 25	5	3.5	Mech. Enginee'ng, 26	5	3.5
	23	19		23	19
Military Science, 5...	3	1.5	Military Science, 4...	3	1.5
	26	20.5		26	20.5

JUNIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
Mathematics, 11	4	4	Mathematics, 12	4	4
Geology, 31	2	2	Geology, 32	2	2
Hygiene, 3	1	1	Hygiene, 4	1	1
Mech. Engineering, 1	3	3	Civil Engineering, 26	6	4.5
Elec. Engineering, 11	4	3	Civil Engineering, 6	3	3
Civil Engineering, 25	6	4.5	Civil Engineering, 18	3	3
Civil Engineering, 27	4	2.5	Mech. Engineering, 2	3	3
	24	20		22	20.5
Miliary Science, 5...	3	1.5	Military Science, 6....	3	1.5
	27	21.5		25	22

SENIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 7	1	1	English, 8	1	1
Business, 3	3	3	Business, 4	3	3
Civil Engineering, 5	3	3	Civil Engineering, 10	8	5
Civil Engineering, 7	3	3	Civil Engineering, 16	7	5.5
Civil Engineering, 9	9	6	Civil Engineering, 20	5	3.5
Civil Engineering, 29	3	1.5			
	22	17.5		24	18.0
Military Science, 7..	3	1.5	Military Science, 8..	3	1.5
	25	19		27	19.5

Division of Electrical Engineering

The Courses in Electrical Engineering aim to give the student not only a thorough technical training, but also a liberal education which will enable him to undertake the great variety of problems which present themselves to an engineer. Besides offering instruction in purely technical studies, the courses include the subjects of English Composition, English Literature, History, French or German, Mathematics, Physics, Mechanics, Chemistry, and Business.

Theoretical work is taught by means of lectures and recitations. The texts used are supplemented by technical periodicals and by numerous problems taken from current practice.

Practical work in electrical laboratories begins with the Junior year and continues to the end of the Senior year. In these laboratories are illustrated the principles taught in the class-room.

Inspection trips made to engineering plants help to bring before the student the conditions to be met with in actual practice.

Every candidate for graduation is required to present a satisfactory thesis embodying the results of some investigation which he has made. This thesis, which must be typewritten, must be accompanied by such drawings and other sheets as are necessary to illustrate and explain the subject. It must be approved by the English Department before it will be accepted.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4 or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1

Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Enginee'ng, 21	3	1.5	Mech. Enginee'ng, 22	3	1.5
Mech. Enginee'ng, 51	3	1	Mech. Enginee'ng, 52	3	1
	22	16.0		25	18
Military Science, 1..	3	1.5	Military Science, 2..	3	1.5
	25	18		28	19.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Physics, 7	3	1.5	Physics, 8	3	1.5
Mech. Enginee'ng, 25	5	3.5	Mech. Enginee'ng, 26	5	3.5
Mech. Enginee'ng, 53	3	1	Mech. Enginee'ng, 54	3	1
	22	17.0		22	17.0
Military Science, 3..	3	1.5	Military Science, 4..	3	1.5
	25	18.5		25	18.5

JUNIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
Mathematics, 11	4	4	Mathematics, 12	4	4
Elec. Engineering, 1	3	3	Civil Engineering, 6	3	3
Elec. Engineering, 41	3	1.5	Elec. Engineering, 2	3	3
Mech. Enginee'ng, 1	3	3	Elec. Engineering, 32	3	1.5
Mech. Enginee'ng, 27	3	1.5	Elec. Engineering, 42	3	1.5
Mech. Enginee'ng, 29	4	3	Mech. Enginee'ng, 2	3	3
Mech. Enginee'ng, 55	3	1	Mech. Enginee'ng, 30	2	1
			Mech. Enginee'ng, 56	3	1
	23	17.0		24	18.0
Military Science, 5..	3	1.5	Military Science, 6..	3	1.5
	26	18.5		27	19.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Business, 3	3	3
Civil Engineering, 7	3	3
Elec. Engineering, 3	3	3
Elec. Engineering, 7	2	2
Elec. Engineering, 43	6	3
Mech. Enginee'ng, 5	5	5
Mech. Enginee'ng, 43	3	1.5
	26	21.5
Military Science, 7..	3	1.5
	29	23

Second Term	H.	C.
English, 8	1	1
Business, 4	3	3
Elec. Engineering, 4	3	3
Elec. Engineering, 6	2	2
Elec Engineering, 8	2	2
Elec. Engineering, 44	6	3
Mech. Enginee'ng, 6	5	5
Mech. Enginee'ng, 44	3	1.5
	25	20.5
Military Science, 8..	3	1.5
	28	22

Division of Mechanical Engineering

The instruction which is offered in the Division of Mechanical Engineering comprises those studies which are fundamental to the profession of mechanical engineering. The courses of study offered treat of the development of power, its transmission, and its use. The instruction given includes the principles of the design and mechanical construction of steam engines, gas engines, steam turbines, and steam boilers, the theory and practice of their operation, and a consideration of their efficiencies; the theory and principles of the design of other machines; and the principles and methods of testing motive-power equipment and other machinery.

The aim of the instruction is to train students for positions of responsibility in the engineering world. Special stress is laid on fundamental principles.

The plan of instruction is systematic and thorough. It includes the fundamental studies of English, mathematics, chemistry, physics, French or German, and history and the more technical subjects of mechanism, machine design, direct and alternating current electricity, thermodynamics, heat engines, and the principles of laboratory practice.

During the second term of the fourth year every candidate for graduation must present a satisfactory thesis which shall embody the results of some investigation he has made personally. The thesis must be typewritten and must be accompanied by such drawings and other sheets as are necessary to illustrate and explain the subject.

The Division of Mechanical Engineering has a well-lighted, airy drafting room; a machine shop equipped with a variety of machines and tools; and a small but serviceably equipped mechanical laboratory and a variety of small apparatus.

Students are required to furnish all instruments and materials used in the drafting-room. The ma-

terials must conform strictly to standards of the Department of Mechanical Drawing, and the instruments must meet with the approval of the instructors.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4, or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Enginee'ng, 21	3	1.5	Mech. Enginee'ng, 22	3	1.5
Mech. Enginee'ng, 51	3	1	Mech. Enginee'ng, 52	3	1
	22	16.5		25	18
Military Science, 1	3	1.5	Military Science, 2	3	1.5
	25	18		28	19.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Physics, 7	3	1.5	Physics, 8	3	1.5
Mech. Enginee'ng, 25	5	3.5	Mech. Enginee'ng, 26	5	3.5
Mech. Enginee'ng, 53	3	1	Mech. Enginee'ng, 54	3	1
	22	17.0		22	17.0
Military Science, 3	3	1.5	Military Science, 4	3	1.5
	25	18.5		25	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Enginee'ng, 1	3	3
Mech. Enginee'ng, 27	3	1.5
Mech. Enginee'ng, 29	4	3
Mech. Enginee'ng, 55	3	1
	23	17.0
Military Science, 5..	3	1.5
	26	18.5

Second Term	H.	C.
Mathematics, 12	4	4
Civil Engineering, 6	3	3
Elec. Engineering, 2	3	3
Elec. Engineering, 42	3	1.5
Mech. Enginee'ng, 2	3	3
Mech. Enginee'ng, 28	3	1.5
Mech. Enginee'ng, 30	2	1
Mech. Enginee'ng, 56	3	1
	24	18.0
Military Science, 6..	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Business, 3	3	3
Civil Engineering, 7	3	3
Elec. Engineering, 3	3	3
Elec. Engineering, 45	3	1.5
Mech. Enginee'ng, 3	2	2
Mech. Enginee'ng, 5	5	5
Mech. Enginee'ng, 41	6	3
	26	21.5
Military Science, 7..	3	1.5
	29	23

Second Term	H.	C.
English, 8	1	1
Business, 4	3	3
Elec. Engineering, 4	3	3
Elec. Engineering, 46	3	1.5
Mech. Enginee'ng, 4	2	2
Mech. Enginee'ng, 6	5	5
Mech. Enginee'ng, 42	6	3
	23	18.5
Military Science, 8..	3	1.5
	26	20

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers to second term courses.

Bacteriology, Physiology, and Hygiene

PROFESSOR PALMER

Hyg 3 and 4 Hygiene and Sanitation.

Two credit hours

For a detailed statement of this course, see School of Arts and Science.

Business Administration and Economics

PROFESSOR HARRIS

Bus 3 and 4 Business Law.

Six credit hours

For a detailed statement of this course, see School of Arts and Science.

Chemistry

PROFESSOR PENNY, ASSOCIATE PROFESSOR TIFFANY AND PROFESSOR ————

C 11 and 12 Inorganic Chemistry.

Four credit hours

C 13 and 14 Qualitative Analysis.

Two credit hours

C 15 and 16 Qualitative Analysis.

Four credit hours

C 21 and 22 Organic Chemistry.

Six credit hours

C 23 Quantitative Analysis.

Two credit hours

C 24 Advanced Quantitative Analysis.

Two credit hours

C 31 and 32 Industrial Chemistry.

Six credit hours

C 33 and 34 Chemical Calculations.

Four credit hours

C 35 and 36 Organic Preparations.

Four credit hours

C 37 Gas Analysis.

One credit hour

C 41 and 42 Physical Chemistry.

Six credit hours

C 43 and 44 Electro Chemistry.

Six credit hours

C 47 Technical Analysis.

Two credit hours

C 50 Thesis. Senior Year.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

Civil Engineering

Professor Thoroughgood, Professor Preston, Assistant Professor Rankin, and Assistant Professor T. D. Smith

CE 5 Hydraulics. (Prerequisites: M 11 and M 12). Physical properties of water; pressure and pressure heads; piezometers and gauges; normal pressure and centre of pressure; pressure on immersed bodies and depth of flotation; effects of translation and rotation; the standard orifice; coefficients of the orifice; losses in orifice; discharge under falling head; measurements by weirs; study of flow in pipes and in open

channels; dynamic action of jets; theory of water wheels. Recitations.

PROFESSOR THOROUGHGOOD *Three credit hours*

CE 6 and 7 Mechanics of Materials. (Prerequisites: M 11; Ps 7 and 8). Theory of simple tension, compression, shear, and bending; elasticity and modulus of elasticity; unit stress values, factors of safety; properties of materials; beams and bars of uniform strength; rivets and riveted joints; shears, moments, and deflections in simple, cantilever, fixed, and continuous beams; stresses in thin pipes, cylinders, and spheres; shrinkage stresses; theory of column formulae; theory of torsion in shafts, cranks, and pins; combined stresses; compound beams and bars and reinforced concrete; resilience, work, and least work; steady, impact, and sudden loads and fatigue of materials; true stresses; theory of thick cylinders and guns; rollers, plates, and spheres; testing of materials. Recitations.

PROFESSOR THOROUGHGOOD *Six credit hours*

CE 9 and 10 Structures. (Prerequisites: M 11 and CE 6). Study of structural materials, designing, and fabrication; fundamental elements of mechanics applied to structures; centres of gravity, moments of inertia, radius of gyration; conditions of loading for maximum shears, moments, and stresses; influence line diagrams; design of girders and bridges; steel viaducts and buildings; design of highway bridges. Drawing room computations and designs of beam, girder, and truss bridges. First term, recitations three hours; design and drawing six hours. Second term, recitations two hours; design and drawing, six hours.

PROFESSOR THOROUGHGOOD *Six credit hours first term and five credit hours second term*

CE 16 Municipal Engineering and Reinforced Concrete. (Prerequisites: CE 6 and 7). Types of sewerage systems; factors in sewer design; construction of sewers; methods of treating sewage; specifications. Sources of water supply; filtration of water; gravity and pumping systems; storage of water, reservoirs, and dams; designing of water systems; distributing systems, fire service. Theory of reinforcement in

concrete; reinforced beams and girders; box and arch culverts and bridges. Recitations four hours; drawing three hours.

PROFESSOR THOROUGHGOOD *Five and one-half credit hours*

CE 18 Structures (Prerequisites: M 11 and CE 27). Theory of the determination of stresses in roof and bridge trusses by analytical methods; dead, live, snow, and wind load determinations; maximum and minimum stresses; study of different types of bridges; portals and lateral bracing; trusses, bents, and towers; cantilever and hinged trusses. Recitations.

ASSISTANT PROFESSOR T. D. SMITH *Three credit hours*

CE 20 Highways and Highway Laboratory. (Prerequisites: CE 7 and CE 29). Highway legislation; preliminary investigations and surveys; earth, sand, clay, gravel, and broken stone roads; bituminous and asphalt road materials; brick, wood block, and stone block and concrete roads; sanitation of streets and roads; highway structures and drainage; study of road material testing. Standard tests of various road-making materials, covering abrasion, toughness, hardness; analyses and tests of sand; standard rattler tests and transverse and absorption tests of paving brick; tests of concrete and the effects of hydrated lime. Recitations two hours; laboratory three hours.

PROFESSOR PRESTON *Three and one-half credit hours*

CE 22 Surveying. (Prerequisite: M 3). Study of the chain, compass, transit, and level; errors in measurements; double meridian distances; computations of areas. Field exercises in the use of the chain, transit, and level; mapping and plotting. Recitations one hour; drawing or field three hours.

ASSISTANT PROFESSOR RANKIN *Two and one-half credit hours*

CE 23 and 24 Surveying. (Prerequisites: CE 22 and M 4). Profile and differential leveling; theory of stadia and stadia measurements; city and topographical surveying, contours; mine surveying, contours; mine surveying; methods of computing and plotting; solar observations; the slide rule. Recitations two hours; drawing or field two hours.

ASSISTANT PROFESSOR RANKIN *Six credit hours*

CE 25 and 26 Higher Surveying and Railroads. (Pre-

requisites: CE 24 and M 6). Theory of triangulation; study of base line measurements; precision measurements of angles; latitude, longitude, and time determinations; precision and trigonometric leveling; use of barometer, plane table, and sextant; hydrographic surveying and soundings; map projections. Simple compound, and reversed curves; spirals; earth-work and the mass diagram. Field and drawing exercises. Recitations three hours; drawing or field three hours.

Assistant Profesor T. D. Smith *Nine credit hours*

CE 27 Graphic Statics. (Prerequisite: M6). Graphical methods applied to the solution of stresses and trusses; theory of force triangle and force polygon; concurrent and nonconcurrent forces; composition and resolution of force; moments and centre of gravity by graphics; graphical solutions for reactions and stresses from dead, live, snow, and wind loads in roof trusses; cantilever and other types of trusses. Recitations one hour; drawing three hours.

Professor Thoroughgood *Two and one-half credit hours*

CE 29 Cement and General Testing Laboratory. (Prerequisite: CE 6). American Society for Testing Materials standard tests on several brands of cement; comparative tests in tension, compression, and bending on neat cement and mortar specimens, using standard and local sands; mechanical anaylsis of sand, specific gravity, and tests for organic matter; comparison of results of fineness test obtained with standard hand process, and mechanical method. Standard tests of wrought iron, cast iron, and steel; tests of various woods in tension, compression, and bending; determination of elastic limit and modulus of elasticity of iron, steel, and wood. Three laboratory hours.

Professor Preston *One and one-half credit hours*

Electrical Engineering

Professor Koerber, Assistant Professor Blumberg, and Assistant Professor Rankin

EE 1 Direct Currents. Theory of the direct current dynamo; shunt, series, and compound wound field magnets; ring and drum windings; commutators; direct current motors. Operation, regulation, and methods of testing dynamos and motors. Study

of motor and dyamo characteristics. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

EE 2 Alternating Currents. The elementary principles of alternating currents. Inductance and capacity; harmonic electromotice foce; single and polyphase circuits. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

EE 3 and 4 Alternating Currents. Continuation of EE 2. Advanced theoretical studies of alternators, synchronous motors, and synchronous converters. High voltage long distance transmission; transmission line phenomena; methods and practice of securing most reliable service. Required of Seniors in Mechanical nd Electrical Engineering. Three hours a week.

PROFESSOR KOERBER *Six credit hours*

EE 6 Wireless Telegraphy and Telephony. A study of modern systems with a review of the historical developments. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 7 Electrical Power Plant Engineering. A study of the design and operation of power plants and substations. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 8 Electric Railways. The construction, equipment, and operation of different types of electric railways. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 11 Dynamo Electric Machinery. (Prerequisites: Ps 5 and 6). Theory and application of both direct and alternating current machinery. Required of Juniors in Civil Engineering. Four hours a week, two hours of laboratory and two hours of recitation.

ASSISTANT PROFESSOR BLUMBERG *Three credit hours*

EE 32 Electrical Design. The calculation, design, and con-

struction of direct current machinery. Required of Juniors in Electrical Engineering. Three hours a week.

PROFESSOR KOERBER *One and one-half credit hours*

EE 41 and 42 Electrical Laboratory. Determination of characteristic curves; efficiencies and magnetic leakage of direct current dynamos and motors. Test of arc and incandescent lamps. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER AND ASSISTANT PROFESSOR RANKIN *Three credit hours*

EE 43 and 44 Electrical Laboratory. Efficiencies and characteristic curves of alternators, synchronous motors, induction motors, and transformers. Required of Seniors in Electrical Engineering. Six hours a week.

PROFESSOR KOERBER *Six credit hours*

EE 45 and 46 Electrical Laboratory. Testing of alternating current machinery and apparatus. Required of Seniors in Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. VAN KEUREN, AND MR. BLAIR

E 1 and 2 Freshman Composition.

Six credit hours

E 3 and 4 Sophomore Literature.

Four credit hours

E 7 and 8 Senior Technical English.

Two credit hours

For a detailed statement of these courses, see School of Arts and Science.

Geology and Mineralogy

PROFESSOR PENNY AND ASSOCIATE PROFESSOR TIFFANY

Geol 31 Mineralogy.

Three credit hours

Geol 32 Geology.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

History and Political Science

PROFESSOR VAUGHN

H 3 History and Government of Delaware.

One credit hour

For a detailed statement of this course see School of Arts and Science.

Mathematics

PROFESSOR HARTER, PROFESSOR PRESTON, AND ASSISTANT PROFESSOR T. D. SMITH

M 3 College Algebra.

Four credit hours

M 4 Advanced Algebra and Trigonometry.

Four credit hours

M 5 Analytic Geometry.

Four credit hours

M 6 Calculus.

Four credit hours

M 11 and 12 Theoretical Mechanics.

Eight credit hours

M 24 Solid Geometry.

No credit

For a detailed statement of these courses, see School of Arts and Science.

Mechanical Engineering

Professor M. Van G. Smith, Assistant Professor Blumberg, Mr. Coyle, and Mr. Lindell

ME 1 Elements of Steam Engineering. (Prerequisites: Ps 5 and 6). A general description of engines and boilers; their fundamental principles; detailed description of their parts; the reasons for using various elements of construction; steam pumps and feed-water heaters; condensers; slide valves and valve setting; the steam engine indicator and reducing motions; indicated and brake horsepower; free-hand sketches of parts of engines and boilers; practice in the use of an engineering vocabulary. Required of all Juniors in Engineering. Three hours a week.

Assistant Professor Blumberg *Three credit hours*

ME 2 The Steam Engine. (Prerequisite: ME 1). The fundamental principles of the simple steam engine; multiple expansion engines; the basic principles of steam turbines; valve gears; governing; a description of the various types of steam calorimeters; the methods of measuring temperature and pressure; the measurement of power; general instructions regarding testing; the principles of steam engine and boiler testing; practice in speaking on technical and engineering subjects. This course is preparatory to courses ME 5 and 6 and ME 41 and 42. Required of all Juniors in Engineering. Three hours a week.

Assistant Professor Blumberg *Three credit hours*

ME 3 and 4 Thermodynamics. (Prerequisites: M 11 and 12). The fundamental laws of the mechanical theory of heat and their application to gases, saturated and superheated vapors; the theory of steam, air and gas engines, and refrigeration machines. Required of Seniors in Chemical and Mechanical Engineering. Two hours a week.

Professor Smith *Four credit hours*

ME 5 and 6 Heat Engines and Boilers. The principles, theory, and construction of the steam engine. The fundamental principles, the theory, and the construction of steam turbines. The theory and principles of the gas engine; its construction

and operation; gas producers. The principles and practice of the efficient combustion of fuels, and the design and construction of steam boilers. Required of Seniors in Electrical and Mechanical Engineering. Five hours a week.

PROFESSOR SMITH *Ten credit hours*

ME 21 and 22 Mechanical Drawing. The care and use of instruments and materials; lettering; section lining; geometrical problems; curve drawing; orthographic projections; the intersection and development of surfaces; isometrics; the layout of elementary machine parts. Required of all Freshmen in Engineering. Three hours a week.

ASSISTANT PROFESSOR BLUMBERG AND MR. LINDELL
Three credit hours

ME 25 and 26 Mechanical Drawing and Descriptive Geometry. The solution of problems relating to points, lines, planes, and surfaces, with practical applications and drawing-room work. Detailed working drawings and assembly drawings; free-hand sketching from machine parts; tracing, blue-printing; computations and drawings made by the use of empirical formulas; structural drawing; the use of hand-books. Required of Sophomores in Civil, Electrical, and Mechanical Engineering. Five hours a week.

ASSISTANT PROFESSOR BLUMBERG AND MR. LINDELL
Seven credit hours

ME 27 Machine Drawing and Design. The design of machine parts by the aid of formulas and hand-books. The elementary theory and principles of the design of machinery. Required of Juniors in Electrical and Mechanical Engineering. Three hours a week.

ASSISTANT PROFESSOR BLUMBERG
One and one-half credit hours

ME 28 Machine Design. The theory and principles of the design of machinery and their application to the design of special parts, comprising the calculation of all stresses and the necessary distribution of metal to withstand the stresses; properties and uses of materials; bearings and lubrication. Computations and drawing. Required of Juniors in Mechanical Engineering. Three hours a week.

PROFESSOR SMITH AND ASSISTANT PROFESSOR BLUMBERG
One and one-half credit hours

ME 29 Elements of Mechanism. The laws of constrained motion; combinations of pure mechanism; rolling and sliding contact; velocity diagrams; linkwork; cams; forms of gear teeth. The general theory of slide valve and link motions. Required of Juniors in Electrical and Mechanical Engineering. Two hours recitation and two hours drafting a week.

MR. LINDELL *Three credit hours*

ME 30 Valve Gears. The application of the Zeuner diagram to the design of the principal slide-valve gears. This course is a continuation of ME 29. Required of Juniors in Electrical and Mechanical Engineering. Two hours of computation and drafting a week.

MR. LINDELL *One credit hour*

ME 41 and 42 Experimental Engineering. The calibration of instruments; brake and efficiency tests of engines; tests of boilers, steam turbines, steam pumps, blowers, air compressors, gas engines, and condensers; hydraulic measurements; calculations and reports. Required of Seniors in Mechanical Engineering. Six hours a week.

PROFESSOR SMITH AND MR. LINDELL *Six credit hours*

ME 43 and 44 Experimental Engineering. A course similar to ME 41 and 42. Required of Seniors in Electrical Engineering. Three hours a week.

PROFESSOR SMITH AND MR. LINDELL *Three credit hours*

ME 51 and 52 Pattern Making. The care and general use of wood-working tools; the principles of pattern making; patterns for machine parts; core boxes; core making; dry sand molding. The study of a text-book and reading assigned articles in engineering journals. Required of Freshmen in Electrical and Mechanical Engineering. Three hours a week.

MR. COYLE *Two credit hours*

ME 53 and 54 Machine Work. Exercises in metal turning, facing, boring, drilling, thread chasing, planing, and milling; the use of metal-working hand tools; chipping and filing. The study of a text-book and reading assigned articles in engin-

eering journals. Required of Sophomores in Electrical and Mechanical Engineering. Three hours a week.

Mr. Coyle *Two credit hours*

ME 55 and 56 Metal Work and Forging. The construction of machine parts; finishing and assembling; forging; tool dressing and tempering. The study of a text-book and reading assigned articles in engineering journals. Required of Juniors in Electrical and Mechanical Engineering. Three hours a week.

Mr. Coyle *Two credit hours*

ME 57 and 58 Machine Work. A course similar to ME 53 and 54. Required of Freshmen in Civil Engineering. Three hours a week.

Mr. Coyle *Two credit hours*

Military Science and Tactics

Major Row, Captain Mackenzie, and Captain Sparks

Mil 1 and 2

Three credit hours

Mil 3 and 4

Three credit hours

Mil 5 and 6

Three credit hours

Mil 7 and 8

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

Modern Languages and Literatures

Professor E. L. Smith, Assistant Professor Saleski, Assistant Professor Brinton, and Assistant Professor Kirkbride

ML 3 and 4 Intermediate French.

Six credit hours

ML 5 and 6 Advanced French.

Six credit hours

ML 21 and 22 Elementary Spanish.

Six credit hours

ML 63 and 64 First Year College German.

Six credit hours

ML 65 and 66 Second Year College German.

Six credit hours

For a detailed statement of these courses, see School of Arts and Science.

Physics

PROFESSOR HANCOCK

Ps 5 and 6 General Physics.

Ten credit hours

Ps 7 and 8 Physical Laboratory.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

GENERAL INFORMATION

EXPENSES

Tuition, Board, Room, and Fees

Tuition is free to students whose families reside* in the State of Delaware. The tuition for all other students is $50 per term or $100 per session.

	1st Term	*2d Term*	*Total*
Matriculation fee (at entrance only)	$5.00	.....	$5.00
Rooms in Harter Hall (lowest)	22.50	22.50	45.00
Board at University Commons (rate $6.25 per week)	104.00	108.00	212.00
Library, Gymnasium, and general University Fee	20.00	20.00	40.00
Athletic Fee	7.50	7.50	15.00
Infirmary‡	.....	.....	.....
Contingent deposit for breakage, Library fines, or loss of Military equipment	10.00	.....	10.00
Student Government Fee	1.00	1.00	2.00
Total (exclusive of Laboratory and Shop fees)			$329.00
For non-residents add $100 for tuition			$100.00
			$429.00

*No person shall be considered eligible to register in the University as a resident of the State of Delaware unless he has resided in the State for the twelve months next preceding the date of proposed enrollment; and no person shall be considered to have gained residence in the State while a student of the institution, unless or until his parents move into the State and acquire bona fide residence there.

‡The infirmary with trained nurse constantly in attendance is maintained at the expense of the University, but students while confined they are required to pay a nominal fee of one dollar ($1.00) for each day or fraction thereof.

Laboratory and Shop Fees

Laboratory and Shop fees vary according to the course taken. The fees for laboratory or shop work in each of the courses named below are as follows:

Agronomy 1	$2.50	Elec. Engineering 42	7.00
Agronomy 2	2.50	Elec. Engineering 43	10.00
Agronomy 4	2.50	Elec. Engineering 44	10.00
Agronomy 5	5.00	Elec. Engineering 45	5.00
Agronomy 7	2.50	Elec. Engineering 46	5.00
Agronomy 9	2.50	Horticulture 16	2.50
Animal Husbandry, 23	2.50	Horticulture 17	2.50
Bacteriology 1	5.00	Horticulture 18	2.50
Bacteriology 2	5.00	Horticulture 20	2.00
Bacteriology 3	5.00	Horticulture 23	2.50
Biology 1	2.50	Horticulture 29	2.00
Biology 2	2.50	Mech. Engineering 41	10.00
Biology 7	2.50	Mech. Engineering 42	10.00
Biology 8	2.50	Mech. Engineering 43	5.00
Chemistry 13	7.50	Mech. Engineering 44	5.00
Chemistry 14	7.50	Mech. Engineering 51	5.00
Chemistry 15	15.00	Mech. Engineering 52	5.00
Chemistry 16	15.00	Mech. Engineering 53	7.50
Chemistry 23	15.00	Mech. Engineering 54	7.50
Chemistry 24	15.00	Mech. Engineering 55	8.00
Chemistry 26	15.00	Mech. Engineering 56	8.00
Chemistry 35	15.00	Mech. Engineering 57	7.50
Chemistry 36	15.00	Mech. Engineering 58	7.50
Chemistry 44	7.50	Military Materials	.50
Chemistry 47	30.00	Physics 3	5.00
Chemistry 50 (Thesis)	15.00	Physics 4	5.00
Civil Engineering 29	5.00	Physics 7	5.00
Civil Engineering 20	5.00	Physics 8	5.00
Elec. Engineering 11	7.00	Plant Pathology 2	2.50
Elec. Engineering 41	7.00	Soil Bacteriology 2	5.00

PROGRAM OF ENGINEERING FEES

The courses to be taken in the several divisions of the School of Engineering are prescribed, without election, in each year. For the convenience of engineering students the following schedules are given showing cost in each year of the required laboratory and shop work:

Chemical Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Chemistry 15 & 16	$15.00	$15.00	$30.00
Sophomore Year			
Chemistry 23 & 24	15.00	15.00	30.00
Junior Year			
Chemistry 35 & 36	15.00	15.00	30.00
Electrical Laboratory	7.00	7.00	14.00
	$22.00	$22.00	$44.00
Senior Year			
Chemistry 47 & 50	30.00	15.00	45.00
Chemistry 44	.....	7.50	7.50
	30.00	22.50	52.50

Civil Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Shop	$7.50	$7.50	$15.00
Chemistry	7.50	7.50	15.00
	$15.00	$15.00	$30.00
Sophomore Year			
Physics	5.00	5.00	10.00
Junior Year			
Electrical Laboratory	7.00	.....	7.00
Senior Year			
Highway Laboratory	5.00	5.00	10.00

Electrical Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Shop	$5.00	$5.00	$10.00
Chemistry	7.50	7.50	15.00
	$12.50	$12.50	$25.00

Sophomore Year			
Shop	7.50	7.50	15.00
Physics	5.00	5.00	10.00
	$12.50	$12.50	$25.00
Junior Year			
Electrical Laboratory	7.00	7.00	14.00
Shop	8.00	8.00	16.00
	$15.00	$15.00	$30.00
Senior Year			
Electrical Laboratory	10.00	10.00	20.00
Mechanical Laboratory	5.00	5.00	10.00
	$15.00	$15.00	$30.00

Mechanical Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Chemistry	$7.50	$7.50	$15.00
Shop	5.00	5.00	10.00
	$12.50	$12.50	$25.00
Sophomore Year			
Physics	5.00	5.00	10.00
Shop	7.50	7.50	15.00
	$12.50	$123.50	$25.00
Junior Year			
Electrical Laboratory	7.00	7.00	14.00
Shop	8.00	8.00	16.00
	$15.00	$15.00	$30.00
Senior Year			
Electrical Laboratory	10.00	10.00	20.00
Mechanical Laboratory	5.00	5.00	10.00
	$15.00	$15.00	$30.00

General Regulations

The following regulations governing the payment of fees, rents, charges, and deposits have been adopted by the Trustees of the University of Delaware, subject to change at their discretion.

Registration

Students are required to register on the days set apart for that purpose.

Days for Registration, 1922-1923

(1) For first term:
Thursday, September 21, 1922—Freshman and Sophomores.
Friday, September 22, 1922—Juniors and Seniors.

(2) For second term:
Friday, February 2, and Saturday, February 3.

Any student who fails to comply with this requirement shall be required to pay a fine of $5 for the first day and $1 for each succeeding day until his registration is completed; and if his registration is not completed within five days after the opening day of the term he shall not be permitted to register.

The term "register," as here used, means that a student shall have his schedule approved by the Dean of the School in which he wishes to enroll, shall pay all his bills at the office of the Business Administrator, and shall have his card approved at the Registrar's office. Before applicants for admission to the Freshman class may register, it is necessary for them to secure cards of admission from the chairman of the Committee on Admission.

Payment of Fees and Charges

(1) Matriculation, Tuition, and Fees: A matriculation fee of $5 shall be paid by every new student entering the Univer-

sity. This fee is collected but once. All fees for tuition (tuition is free to students from the State of Delaware), incidental expenses, and laboratory charges are due and payable on the days set for registration.

(2) Dormitory Rents and Charges: A preliminary payment of $10 is required of a student when he reserves a room. The remainder of the rent for the year is payable, in two equal installments, on the days set for registration in both terms. The preliminary payment of $10 shall be forfeited to the University if the student or applicant for admission fails to complete his registration within five days after the opening day of the session.

(3) Board: All resident students, except those who live at home, are required to board in the dining-halls of the University. The cost of board, with dining-hall service, is $6.25 per week.

Payments for board are due and payable as follows: $52.00 on the days set for registration for the first term; $52.00 on November 15; $54.00 at the time set for registration for the second term; and $54.00 on April 5. Students who fail to pay mid-term board bills on November 15 and April 5, respectively, shall have $1.00 added to the bill for each succeeding day; and if they fail to pay within five days after the bills become due, they shall be dropped from the University.

No refund for absence will be made unless the student is obliged to be away from the University on account of sickness for a period of not less than one week and presents a physician's certificate stating that he was too ill during his absence to attend to his collegiate work. Overhead charges will be deducted from all refunds.

(4) Contingent Fee: Every student shall deposit with the Business Administrator, at the beginning of the session, as a contingent fee the sum of $10 to cover any breakage, damage, loss, or other charges against him. At the end of the year any part of the $10 not so used will be returned to the student.

(5) A Diploma Fee of $10 will be charged to each person who receives a degree in course.

Withdrawals

A student who withdraws from the University may, provided he gives written notice to the Dean at the time of his withdrawal, secure an allowance granted in the following special cases:

(1) If he withdraws within one week of the date on which he registered, he will receive a return of the full amount of the fees paid; but in no case will the matriculation fee be returned.

(2) If he withdraws during the term on account of illness or other physical disability, he will be entitled to a return of an amount which shall be such proportionate part of his entire fees as the number of weeks in which he is not in attendance bears to the number of weeks in the term for which the fees were collected.

Honorable Dismissal and Graduation

No student shall be granted a certificate of honorable dismissal or be graduated who has not satisfied in full all his financial obligations to the University .

Dormitories

Rooms may be obtained in Harter Hall. The rooms are of three classes: single, double, and en suite. The University provides for each student a bed, chiffonier, study table, and two chairs. Other furnishings, including bed clothes and linen, are provided by the student. All rooms are heated by steam and lighted by electricity.

Applications for rooms for 1922-1923 should be made to the Business Administrator. It is recommended that rooms be engaged not later than the month of June. The rentals of the rooms for the collegiate year are as follows:

Single room	$75.00	to $85.00	each	student
Double room	45.00	to 47.50	"	"
Suite for two, with separate room for study	90.00	to 100.00	"	"
Suite for three	70.00		"	"

A payment of $10 on account must be made by each student when he reserves a room. This payment shall be forefeited to the University if the student fails to complete his registration within five days after the opening day of the session.

The University reserves the right to require a dormitory room to be vacated at any time for cause; in which case a proportionate rebate of the sum paid will be made.

When rooms are voluntarily vacated during a term, the rent must be paid until the end of the term.

Registration. Application for admission to college should be made to the Chairman of the Committee on Admission before August 1, 1922. Candidates for admission to the Freshman class are advised to submit their applications and credentials at the time of the Entrance Examinations in June or during the summer preceding the college year in which they wish to enter. Freshman and Sophomores must register on Thursday, September 21; Juniors and Seniors, on Friday, September 22.

Changes between Schools of Instruction. Changes from one School of Instruction to another may be made only at the opening of a term, with the approval of the Faculty and the consent of the parent or guardian.

Examinations. Examinations in all subjects are held at the close of each term and are conducted either in writing, or orally, as the nature of the subject may require or as the professor may prefer. Review examinations are also held at other times whenever, in the judgment of the professor, the objects of instruction may be promoted by such means. The examinations

are designed not as a mere test of the student's knowledge, but as a valuable training in rapid, concise, and accurate expression. They serve as a valuable means of giving the student a ready command of his mental powers, and, by encouraging a review of a period of work, they give him a broader view and a firmer hold of the several subjects of study.

The Honor System was adopted by the student body in 1916.

Promotions and Grades. In determining a student's fitness to proceed to a higher class, great weight is given to the character of his performance of recitation room duties. The results of the term examinations are combined with the recitation records; but in fixing the student's standing the quality of his recitation work is the weightier factor.

No student will be promoted unless he has completed three-fourths of the work of his class of the year just passed and has no condition in previous years unsatisfied.

A student who voluntarily registers in a course for which he has previously obtained credit shall be held responsible for the completion of that course, and the grade obtained upon repetition shall be the official grade.

Re-examinations. Students who fail in an examination in any subject are required to pay a fee of one dollar for re-examination. In order to be admitted to a re-examination students must present to the examiner a certificate properly signed showing that the fee has been paid.

Reports. At the close of each term a report of the student's general combined recitation and examination record will be sent to his parents or guardian. These reports show the course of study the student is pursuing and the class in which he is enrolled. Parents are urged to give these reports close attention,

and, when the reports indicate any lack of attention to duty, to co-operate with the Faculty in correcting habits of idleness and indifference.

Elective Studies. Students in the School of Arts and Science must submit to the Dean, on or before May 15 of each academic year, schedules showing elective courses for the following year.

Advisers. An adviser for each ten members of the Freshman Class is appointed by the President at the beginning of each academic year. The advisers for the other classes are appointed by the President at the close of each academic year from a list of men chosen by the respective classes.

Attendance. Regular attendance is required at all college exercises. Suitable rules governing absences have been adopted and any student not observing them will be dropped from the college. Punctual return to the college after vacation or at the beginning of a term is insisted upon. All absences immediately preceding or following a vacation are counted double.

All work missed by reason of necessary absences must be made up to the satisfaction of the professor concerned; otherwise the student will be marked zero for each exercise missed. The privilege of making up work will not be granted after an unexcused absence.

Infirmary. To aid in caring for the health of the students, the college has established an Infirmary. In the building are four rooms for ordinary cases, two rooms for contagious diseases, and an office for first aid. The work of the infirmary is in charge of Miss Rosalie Pié, a trained nurse.

Students' Self Aid. A committee of members of the Faculty helps to secure employment for students who depend on their own resources. All students wishing to avail themselves of opportunities thus offered are required to register with the chairman of the committee, Professor G. E. Hancock.

Prizes and Scholarships

THE BISHOP COLEMAN MEMORIAL PRIZE

The Bishop Coleman Memorial Prize of twenty-five dollars is offered annually to the member of the graduating class having in all respects the best standing in the Senior year.

LIEUTENANT CLARKE CHURCHMAN MEMORIAL PRIZE

The Delaware Daughters of the American Revolution and friends of Lieutenant Clarke Churchman have established a "Lieutenant Clarke Churchman Memorial Fund," the income from which is to be used for the encouragement of military virtues and instruction by the annual presentation of a premium to the student who shall attain the highest proficiency in the military department. The prize derived from this fund amounts annually to twenty-five or thirty dollars.

THE PHILO SHERMAN BENNETT PRIZE

The Hon. William Jennings Bryan, in carrying out the will of Philo Sherman Bennett, Esq., late of New Haven, Connecticut, has designated the University of Delaware as one of the twenty-five colleges or universities to receive its share of an endowment of ten thousand dollars to be invested and the proceeds to be applied to the payment of an annual prize "for the best essay discussing the principles of free government." The University of Delaware has accordingly received four hundred dollars in trust for this purpose, and from the income derived from this sum an annual prize will be awarded to the undergraduate student who presents the best essay in the fields prescribed. The income from this fund yields an annual prize of twenty to twenty-five dollars.

THE WILLIAM D. CLARK PRIZE FOR MATHEMATICS

The late Miss Julia Newton Clark, in memory of her father, William D. Clark, offered a prize of twenty-five dollars to be awarded at the end of the Sophomore year to the student who had shown the greatest proficiency in Mathematics during his Freshman and Sophomore years. Since her death this prize has been given by Miss Emma Clark.

THE STATE GRANGE PRIZES

For the purpose of encouraging a high standard of work in the Agricultural courses, the Delaware State Grange has offered three cash prizes of fifteen dollars, ten dollars, and five dollars in gold to be awarded respectively to the three students pursuing the course in Agriculture who have manifested the greatest interest, and made the greatest progress in their work during the year for which the prizes are awarded.

OLD HOME PRIZE *(William H. Purnell Memorial)*

This prize was established by persons interested in the life, history, and biography of the Delmarvia peninsula, and made a memorial to President Purnell. The annual income from a fund of $500 is available for this prize, to be awarded for the best essay on some phase of the history of Delaware or the "Eastern Shore." It is open to all students. Successful essays will be read by title on Commencement Day and will be bound and filed in the College Library. Essays of sufficient merit may be published. Rules for the guidance of contestants will be posted.

ALUMNI PRIZE FOR ADVANCEMENT IN ENGINEERING

A prize of $25 is offered annually by Julius H .G. Wolf, Class of 1893, to the student in Engineering who

shows the greatest progress in his work during the Junior and Senior years.

THE COLONEL J. ERNEST SMITH PRIZES

These prizes are paid from the income on $500 donated by Colonel J. Ernest Smith for the highest rating in the Junior and Senior classes in the department of Military Science and Tactics.

SCHOLARSHIP OF THE HARVARD, PRINCETON, AND YALE CLUBS OF DELAWARE

A scholarship amounting to $100 annually was founded in 1914 by the Harvard, Princeton, and Yale Clubs of Delaware. It will be awarded to a deserving student from Delaware. The appointment is made for one year only, but the incumbent for any one year may be reappointed.

SCHOLARSHIP OF THE PRINCETON CLUB OF DELAWARE

A scholarship amounting to $100 annually was founded in 1919 by the Princeton Club of Delaware. It will be awarded to a deserving Delaware student.

THE ROBERT BAYNE WHEELER SCHOLARSHIP

Mrs. Robert Bayne Wheeler has given to the college $2500, the income from which, amounting to about $125, is to be given annually to a deserving Delaware boy to whom this amount will be of service in helping him to obtain an education.

DU PONT SCHOLARSHIP

For the purpose of encouraging young men to specialize in chemistry, the E. I. du Pont de Nemours and Company offers a scholarship of $300 to a Senior student in chemistry.

THE SCHOLARSHIP OF THE SONS OF DELAWARE OF PHILADELPHIA

A scholarship of $300 was founded in 1919 by the Sons of Delaware of Philadelphia. It will be awarded annually to a student from the State of Delaware. The incumbent for any one year may be reappointed.

WILMINGTON CHAPTER SCHOLARSHIP

A scholarship amounting to $100 is offered by the Wilmington Chapter of the Alumni Association to a student who has successfully completed his Freshman year. The holder is to be chosen by the Scholarship Committee of the Wilmington Chapter.

THE TATUM MEMORIAL LECTURE FUND

Mr. Ashton R. Tatum, a friend of the College, at his death left a fund of $1000, the income from which is to be devoted to lectures on the treatment and care of horses.

Libraries

The main library of the University, containing about 20,000 volumes, is temporarily located in a separate building facing Old College. It contains a good collection of books for reading and study, reference books, and reading rooms. The books are arranged according to the decimal system of classification on open shelves to which the students have free access. The library is open daily, except Sunday, from 8 A. M. to 6 P. M. and from 7 to 10 P. M., during the regular academic year. During the Summer Session and vacations special hours are announced.

In addition to the collection of books, more than 130 of the leading literary and scientific periodicals are to be found in the reading room. The library receives daily papers from Wilmington, Philadelphia, New York, Boston, and Washington, as well as many state papers. The University is one of the officially designated depositories of the United States Government, and from this source receives valuable documents, which may be consulted in the library.

Various alumni and friends of the University have added to the resources of the library from time to time by gifts of books and magazines. Such gifts are greatly appreciated. They have made possible additions to the library not provided for in the regular budget and have enriched and strengthened the collections of books in special fields.

Besides the main library there is a separate library of over 5,000 volumes for the students of the Womens' College. Special reference and technical libraries are maintained in some of the departments under the supervision of the professor in charge. The combined libraries of the University contain about 30,000 volumes.

Athletics

Football, baseball, basketball, track athletics, and tennis are recognized as collegiate sports.

The general supervision of all athletic sports is vested in an athletic council composed of two members of the Faculty, two members of the Alumni Association, and three undergraduates, chosen from the three upper classes.

All eligibility rules originate with the Faculty.

Any student who is admitted to college later than the second Monday of a term is not eligible during that term to represent the college in intercollegiate contests.

No student is permitted to represent the college on any athletic team or as manager of such, who is not in good standing in his class and doing, at the time, satisfactory work in his studies.

No student pursuing a course other than one leading to a degree will be permitted to represent the college in any athletic contest during his first year in residence, unless he shall have satisfied the entrance requirements of a course leading to a degree.

BUILDINGS AND GROUNDS

GYMNASIUM

A spacious gymnasium containing apparatus for gymnastic exercises, a running track, shower baths, and a swimming pool, affords ample accommodations for indoor athletic sports, such as basketball, indoor-running, swimming contests, wrestling, and boxing.

ATHLETIC FIELD

In Frazer Field, the college possesses one of the best athletic fields in the country. This field, completely equipped, was donated to the college by Mr. and Mrs. Eben B. Frazer, of Newark, and Mr. Stanley

Frazer, '04, of New York city, as a memorial to a son and brother, Joseph Heckart Frazer, '03. The field contains a baseball diamond, football gridiron, tennis courts, and a quarter-mile cinder track with a 220-yard straightaway. It is enclosed with a hollow tile stucco wall and has a beautiful terrace along one side.

State Bacteriological and Pathological Laboratory

By Act of the Delaware Legislature, a State Bacteriological and Pathological Laboratory has been established at the college. The Laboratory is under the management of the State Board of Health. Its location makes accessible the resources of the college in the way of libraries and apparatus.

Organizations

The Agricultural Club. The object of the club is to create enthusiasm and to promote the interests of agriculture among the students as well as to accustom the members to talk on agricultural subjects before an audience.

American Association of Engineers. Delaware College was granted a chapter in the American Association of Engineers in February, 1920. The objects of the American Association of Engineers are to raise the standards of ethics of the engineering profession and to promote the economic and social welfare of the engineer. In addition to upholding the objects of the national association the local chapter aims to provide a means by which the student may be brought into closer touch with the profession for which he is preparing himself.

Athletic Council. The Athletic Council is in direct charge of all athletic activities not constituting a part of the college curriculum. It is composed of two rep-

resentatives from the Faculty, two representatives from the Alumni, and three representatives from the Students, representing respectively the Senior, Junior, and Sophomore classes.

Varsity Club. The Varsity Club is an organization composed of students who have earned their Varsity D.

Derelicts. The Derelicts is an honorary senior fraternity, the purpose of which is to create a spirit of goodfellowship throughout the Senior Class and the Student Body.

Wolf Chemical Club. The Wolf Chemical Club is an organization composed of undergraduate chemistry students of the college, the purpose of which is to furnish a medium through which they may come into closer contact with members of the Faculty and outside professional men.

Faculty Club. A Faculty Club was organized in 1918 for the purpose of promoting social intercourse among the members of the Faculty.

Footlights Club. The purpose of this organization is to present serious plays, comedies, and farces, in Newark or out of town as conditions may determine.

Fraternities. Three national Greek letter fraternities have local chapters at the college: Kappa Alpha (Southern), Sigma Nu, and Sigma Phi Epsilon. Two organizations, Omega Alpha and Gamma Delta Rho, are local.

Phi Kappa Phi. A Chapter of the Phi Kappa Phi, an honorary fraternity devoted to the interests of scholarship, was established at the college in 1905.

Publications

The regular publications of the college consist of the University of Delaware Review, the Bulletin, and the Experiment Station Bulletin.

The **Bulletin** is issued quarterly. One of the four numbers is the Catalogue number.

The Review. The Review is a weekly publication devoted to the general interest of the students. The subscription price is $2.00 a year.

The Blue Hen is a biennial record of college activities issued by the Junior and Senior classes.

The **Experiment Station Bulletin** is issued from time to time by the Experiment Station. One of the numbers is the Annual Report.

These bulletins will be sent free to any address in the State.

Students' Loan Fund. A Loan Fund to help needy students was established by the Alumni Association in 1915. The object of the Committee, which was appointed by the President of the Association, is to raise a substantial sum of money which will be placed in trust and the income of which will be used to help deserving students. Definite amounts will be loaned to students on promissory notes which the student is expected to meet as soon as he is financially able.

Alumni Organizations and Activities

The Alumni Association of Delaware College is the central organization for the general body of Alumni. Membership is limited to graduates, and to former students who may be elected by the Association.

The Annual Business Meeting is held on the Saturday preceding Commencement Day each year. In the evening various reunions and celebrations are held. A mid-winter dinner is held every year at the College on the Saturday nearest to Washington's Birthday.

Ways and Means Committee for 1921-1922: Curtis C. Cooper, '02, Chairman; W. M. Francis, '08; Victor H. Jones, '09; A. H. Dean, '14; H. C. Samonisky, '16.

The officers of the General Alumni Association for 1921-1922 are as follows: President, George T. Lockwood, '03; Vice-President, Joseph D. Truxton, '04; Secretary and Treasurer, George E. Dutton, '04.

Graduates in various parts of the country have organized branch alumni associations. Up to the present time, seven active branches have been formed; The Western Pennsylvania Section, Pittsburgh, Pa.; the New England Society, Boston, Mass.; the New York Chapter, New York City; the Philadelphia Society, Philadelphia, Pa., the Wilmington Chapter, Wilmington, Delaware, the Lower Delaware Society, and the Washington Chapter, Washington, D. C.

DEGREES CONFERRED AT THE ANNUAL COMMENCEMENT OF THE UNIVERSITY OF DELAWARE, JUNE 13, 1921

Civil Engineer

Ralph Briggs Kyle, '03	New Orleans, La.
Henry Ward Lyndall, '05	Wilmington
Robert Llewellyn Sumwalt, '18	Augusta, Ga.

Bachelor of Arts (Arts and Science Course)

William Templin Broughall	Wilmington
Harvey Newton Brown	Newark
William Henry Foulk	Wilmington
Vaughan Archelaus Hastings	Delmar
Joshua Willard McMullen	Lincoln Univ., Pa.
Arthur Farquhar Spaid	Dover
James Petheram Truss	Wilmington

Bachelor of Science (Arts and Science Course)

George Holton Aikens	Wilmington
Charles Thomas Attix	Kenton
Wm. Claggett Dorsey Donoho	Seaford
Joseph Harrison Fairbanks	Wilmington
John Alexander Levandis	Wilmington
Charles Stewart Lynch	Wilmington
George Harney Madden	New Castle
Arrigo Eugene Marconetti	Brooklyn, N. Y.
Paul Kane Monaghan	Wilmington
George Franklin Waples	Milton

Bachelor of Science in Agriculture

Howard Berton Alexander	Oil City, Pa.
John Arnold Barnard, Jr.	Wyoming
Francis Allyn Cooch, Jr.	Newark
Welton Franklin Elzey	Seaford
Roland Cookman Handy	Federalsburg, Md.
Harry Herman Jones	Woodside
John Woodward Olcott	Washington, D. C.
Samuel Leon Perchick	Philadelphia, Pa.
Claude Ellis Phillips	Delmar
Joseph Samuel Wilson	Georgetown

Bachelor of Science in Civil Engineering

Irving Hook Boggs	Dover
Marion Packard Boulden	Elkton, Md.
William Heisler Frederick	Marshallton
William Albert Hemphill	Delaware City
Ira Lucas Preston	Trenton, N. J.
George Massey Sipple	Milford
William John Smyth	Wilmington
Rudolph York Taggart	Elkton, Md.
Melvin Frederick Wood	Wanaque, N. J.

Bachelor of Science in Mechanical Engineering

Leon Hackett Gordy	Wilmington
Allen Jaquith Johnson	Middletown
George Cleaver Price	Newark
Ira Kenneth Steele	Newark

Bachelor of Science in Electrical Engineering

William Thomas Anderson	Henry Clay
Charles Wardon Gass	Marshallton
Walter David Lindsay	Providence, Md.
Phillip Henry Marvel	Houston
Richard Hutchinson McMullen	Wilmington
Joseph Coley Wise	Smyrna

Bachelor of Science in Chemical Engineering

James Draper Craig	New Castle
Thomas Wilmer Holland	Smyrna
James Albert Horty	Wilmington
James Harold Kohlerman	Wilmington
Hugh McCaughan, Jr.	Wilmington
John Francis McWhorter, Jr.	Middletown
Thomas William Mulrooney	Wilmington
John Fletcher Price	Carney's Point, N. J.

PRIZES, SCHOLARSHIPS, AND HONORS ANNOUNCED AT THE COMMENCEMENT OF 1921

The Bishop Coleman Memorial Prize: George Harney Madden.

The Lieutenant Clarke Churchman Memorial Prize: Leon Hackett Gordy and George Massey Sipple.

The Bennett Prize: Joseph Chandler Wood.

The William D. Clark Prize for Mathematics: Abraham Schimel and Alvin Warrington Burnite.

The State Grange Prizes: First, Daniel Edwin Devitt; Second, Harry Herman Jones; Third, Henry Shurtleff Barker, Jr.

The Old Home Prize: William Templin Broughall.

The Scholarship of the Harvard, Princeton, and Yale Clubs of Delaware for 1921-22 was awarded to Thomas Muncy Keith.

The Princeton Scholarship for 1921-22 was awarded to William Franklin Pierce Jacobs, Jr.

The Robert Bayne Wheeler Scholarship for 1921-22 was awarded to Willard Robinson Triggs.

The du Pont Scholarship in Chemistry was awarded to George Gray Carter.

The Sons of Delaware Scholarship for 1921-22 was awarded to Charles Norman Wade.

The following members of the Class of 1921 were elected to the Honorary Fraternity of Phi Kappa Phi:

Marion Packard Boulden — John Fletcher Price
William Templin Broughall — Roland Cookman Handy
Thomas Wilmer Holland — Melvin Frederick Wood
Richard Hutchinson McMullen

THE WOMEN'S COLLEGE

ACADEMIC COUNCIL

THE WOMEN'S COLLEGE

WALTER HULLIHEN, PH. D. ..... *President*
M. A., University of Virginia, 1896; Ph. D., Johns Hopkins University, 1900; Professor of Classics, University of Chattanooga, 1904-1909; Professor of Greek, University of the South, 1909-1920; Dean, College of Arts and Science, University of the South, 1912-1920; President, University of Delaware, 1920——.

WINIFRED JOSPHINE ROBINSON, PH. D. ..... *Dean*
B. S., University of Michigan, 1899; B. Pd., University of Michigan, 1899; M. Pd., Michigan Normal College, 1912; M. A., Columbia, 1904; Ph. D., Columbia, 1912; Critic Teacher, Michigan Normal College, 1893-1895; Assistant in Biology, 1900-1905, Instructor in Botany, 1905-1907 and 1909-1910, Professor of Botany, 1910-1913, Vassar College; Dean of Women, University of Wisconsin, Summer Session, 1913-1914; Dean of the Women's College of Delaware, 1914——.

GEORGE ABRAM HARTER, PH. D. ..... *Mathematics*
B. A., St. John's College, 1878; Ph. D., St. John's College, 1893; Tutor in Latin and Mathematics, St. John's College, 1878-1880; Professor of Mathematics, Delaware College, 1885-1888; Professor of Mathematics and Physics, Delaware College, 1888——; President of Delaware College, 1896-1914.

ELISHA CONOVER, M. A. ..... *Ancient Languages and Literatures*
A. B., Dickinson College, 1884; M. A., Dickinson College, 1887; Professor of Latin, Wilmington Conference Academy, 1888-1891; Professor of Latin and Greek. Montpelior Seminary, Vermont, 1891-1895; Professor of Ancient Languages and Literatures, Delaware College, 1895——.

EDWARD LAURENCE SMITH, M. A. *Modern Languages and Literatures*
A. B., Delaware College, 1896; M. A., Delaware College, 1899; Instructor in German, French, and Spanish, Brooklyn Polytechnic Institute, 1901-1902; Instructor in Modern Languages, Delaware College, 1902-1904; Professor of Modern Languages and Literatures, Delaware College, 1904——; Dean of Delaware College, 1915——; Secretary of the Faculty of Delaware College, 1916——.

WILBUR OWEN SYPHERD, PH. D. ..... *English*
A. B., Delaware College, 1896; B. S., University of Pennsylvania, 1900; M. A., Harvard, 1901; Ph. D., Harvard, 1906; Instructor in English, University of Wisconsin, 1901-1903; Professor of English, Delaware College, 1906——.

EARNEST VANCOURT VAUGHN, PH. D. .... *History and Political Science*
B. L., University of Missouri, 1900; M. A., University of Missouri, 1904; Ph. D., University of Pennsylvania, 1910; Instructor in History, University of Missouri, 1906-1911; Professor of History and Political Science (State of Delaware Chair of History), Delaware College, 1911——.

CHARLES CONGER PALMER, S. M., D. V. M. *Bacteriology*
D. V. M., Ohio State University, 1912; S. M., University of Minnesota, 1915; Instructor in Physiology and Veterinary Science, and Assistant Veterinarian, Minnesota Experiment Station, 1913-1915; Assistant Professor of Physiology and Assistant Veterinarian, Minnesota Experiment Station, 1915-1917; Professor of Bacteriology, Physiology, and Hygiene, and Veterinarian to Experiment Station, Delaware College, 1917——.

WILLIAM ALBERT WILKINSON, M. A. ..... *Education*
Graduate Warrensburg State Normal School, 1907; B. S., University of Missouri, 1910; A. M., University of Missouri, 1911; Graduate Student Teachers College, Columbia University, 1917-1918; Assistant in Education, University of Missouri, 1910-1911; Instructor in Education, University of Missouri, Summer Session, 1916; Head of Department of Education, Mayville State Normal School, 1911-1917; Professor of Education, Delaware College, 1918——.

GEORGE ELLIOTT DUTTON, M. A. ..... *English*
A. B., Delaware College, 1904; M. A., Harvard University, 1911; Instructor in English, University of Missouri, 1908-1910; Instructor in English, Delaware College, 1911-1913; Assistant Professor of English, Delaware College, 1913-1917; Associate Professor of English, Delaware College, 1917-1918; Professor of English, Delaware College, 1918——.

QUAESITA CROMWELL DRAKE, M. A. ..... *Chemistry*
B. A., Vassar College, 1910; M. A., 1911; Assistant in Chemistry, Vassar College, 1911-1913, Instructor, 1913-1914; Fellow in Chemistry, University of Chicago, 1915-1916 and Research Assistant, 1916-1917; Instructor in Chemistry, 1917-1918, and Professor of Chemistry, Women's College of Delaware, 1918——.

LAURA VEACH CLARK, A. B. .....*Home Economics*
A. B., Western Maryland College, 1905; Drexel Institute Diploma, 1914; Instructor in Home Economics, Drexel Institute, Philadelphia, 1914-1918; Extension Work, Newark N. J., under co-operative direction New Jersey State Agricultural College and U. S. Department of Agriculture, 1918-1919; Professor of Home Economics, Women's College of Delaware, 1919——.

FINLEY MELVILLE KENDALL FOSTER, PH. D. ..*English*
B. A., New York University, 1913; M. A., New York University, 1914; Ph. D., Columbia University, February, 1918; Assistant in English, New York University, 1913-1914; Instructor in English, New York University, 1914-1916; President's University Scholar, Columbia University, 1916-1917; Instructor in English, Delaware College, 1917-1918; Assistant Professor of English, 1918-1920; Associate Professor of English, 1921——.

WILLIAM LLOYD BEVAN, PH. D. .....*History*
M. A, Columbia University, 1889; Ph. D., University of Munich, 1893; Fellow School Political Science, Columbia University, 1889; Professor of History, University of the South, 1898-1903; Associate Editor New York Churchman, 1906-1910 and 1913-1918; Professor of History, Kenyon College, 1918-1920; Associate Professor of History, University of Delaware, 1920-1921; Professor of European History, 1921——.

REINHOLD EUGEN SALESKI, M. A...*Modern Languages*
B. A., Harvard University, 1911; M. A., Harvard University, 1917; Assistant Professor of Modern Languages, Delaware College, 1917——.

GEORGE E. BRINTON, PH. B. .....*Modern Languages*
Ph. B., Franklin and Marshall, 1913; Modern Languages, Whitesville (N. Y.) High School, 1913-1915; Instructor in Modern Languages, Mackenzie School, 1915-1916; Assistant Professor of Modern Languages, Delaware College, 1919——.

RAYMOND W. KIRKBRIDE, B. S. ....*Modern Languages*
B. S., Westminster College (Pa.), 1913; Chautauqua Promotion Work, 1913-1917; Instructor Spiers School, 1917-1918; Assistant Professor of Modern Languages, Delaware College, 1919——.

CARL JOHN REES, A. B. ....*Mathematics and Physics*
A. B., Franklin and Marshall College, 1918; Teacher of Mathematics and Science, Lancaster High School, 1917-1920; Assistant Professor of Mathematics and Physics, Women's College of Delaware, 1920——.

MAMIE E. ROHR, M. A. .....*Education*
B. S., Columbia University, 1917; M. A., Columbia University,

1918;Teacher of English and Geography in upper elementary grades, Lynchburg, Virginia, 1905-1910; Supervisor in upper elementary grades, State Normal School, Farmville, Virginia, 1910-1915; Assistant Teacher in Horace Mann School, 1915-1918; Grammar Grade Supervisor and Instructor in Education, North Carolina College for Women, Greensboro, North Carolina, 1918-1919; Instructor in Education, Women's College of Delaware, 1919-1920; Assistant Professor, 1920——.

DORA WILCOX .....*Music*
Mansfield State Normal Conservatory, 1912; Cornell University Music Department, 1914; Supervisor of Music in Public Schools of Lewistown, Pa., 1914-1915; Tyrone, Pa., 1916-1917; Coatesville, 1918; Instructor in Music, Women's College of Delaware, 1919——.

MIRIAM ELLEN NULL, B. A. .....*Home Economics*
B. A., University of Illinois, 1919; Assistant in Home Economics, Summer Sesion, University of Illinois, 1919; Instructor in Home Economics, Women's College of Delaware, 1919——.

RACHEL W. TAYLOR.....*Fine and Industrial Arts*
Graduate of State Normal School, Trenton, N. J., 1908; graduate of School of Fine and Applied Arts, Pratt Institute, Brooklyn, N. Y., 1912; Teacher, Asbury Park, N. J., 1908-1910; Instructor of drawing in the high schools, Springfield, Mass., 1912-1913; Supervisor of Fine and Industrial Arts, State Model School, Trenton, N. J., 1913-1917; Instructor of Drawing, State Normal School, Trenton, N. J., 1917-1920; Professor of Fine and Industrial Arts, Women's College of Delaware, 1920——.

AGNES SNYDER .....*Education*
Graduate of Baltimore Teacher Training School, 1905; part-time student Johns Hopkins University, 1912—; Teacher, Baltimore Public Schools, 1905-1907, 1909-1918; Principal, Hope Farm, Verbank, N. Y., 1907-1909; Critic teacher, Newark, Del., 1918-1920; Demonstration teacher, Cleveland School of Education, Summer 1920; Director of student teaching, Women's College of Delaware, 1920——.

GLADYS FORD PRATT, B. A. .....*Librarian*
B. A., Mount Holyoke College, 1914; Simmons College, School of Library Science, 1916; George Washington University, 1917-1918; Assistant, Mount Holyoke College Library, 1914-1917; Cataloguer, Smithsonian Institution Library, 1917-1920; Librarian, Women's College of Delaware, 1920——.

ERNEST CANFIELD VANKEUREN, A. B. .....*English*
A. B., Cornell University, 1920; Instructor in English, Delaware College, 1920——.

ADA WILLIM, B. S. ..... *Chemistry*
B. S., Women's College of Delaware, 1918; Chemist with Hercules Powder Company, 1918; Assistant in Chemistry, Women's College of Delaware, 1919——.

ELIZABETH GAMBLE KELLY, M. A. .. *Home Economics*
B. S., Carnegie Institute of Technology, 1913; A. M., Teachers College, Columbia University, 1921; Teacher Home Economics, Heinz House, Pittsburgh, Pennsylvania, 1911-1916; Teacher Home Economics, Braddock High School, 1916-1919; Instructor in Home Economics, Carnegie Institute of Technology, 1919-1920; Instructor in Home Economics, Women's College of Delaware, 1921——.

DOROTHY AILEEN CALEF, M. S. ..... *Biology*
B. A., Mills College, 1920; M. S., University of Chicago, 1921; Instructor in Biology, Women's College of Delaware, 1921——.

MARION CHASE PARKHURST..... *Physical Education*
Graduate of the Boston School of Physical Education, 1917; Supervisor of Physical Training in Public Schools, Danvers, Massachusetts, 1917-1919; Supervisor of Physical Training in Public Schools, Winchester, Massachusetts, 1919-1921; Director of Physical Education, Women's College of Delaware, 1921——.

ELMER REEVE HITCHNER, M. S. ..... *Bacteriology*
B. S., Pennsylvania State College 1915, M. S., Ibid 1916; Instructor in Bacteriology, Pennsylvania State College 1917; Instructor in Bacteriology, New York State School of Agriculture; St. Laurence University, Canton, New York, 1918; Research Dye Chemist, E. I. du Pont de Nemours & Co., 1919-1920; Instructor, University of Delaware, 1920——.

LOUIS WILLIAM FLACCUS, PH. D. ..... *Philosophy*
A. B., Washington and Jefferson College, 1900; University of Berlin, 1901; A. M., Harvard University, 1902; Ph. D., Harvard, 1904; Honorary Fellow, Clark University, 1904-1905; Instructor in Philosophy, University of Pennsylvania, 1905-1910; Assistant Professor, 1910-1916; Professor, 1917——. Lecturer, Women's College, 1921——.

TEACHING FELLOWS

MARY A. OSPINA..... *French and Spanish*
ANNE L. RITZ..... *Art*

STANDING COMMITTEES OF THE ACADEMIC COUNCIL—WOMEN'S COLLEGE

ADMISSION: Miss Snyder, Chairman; Miss Null, Professor Brinton.

ADVANCED STANDING: Professor Conover, Chairman; Mr. Van Keuren, Miss Kelly.

APPOINTMENTS: Professor Wilkinson, Chairman; Professor Dutton, Professor Clark, Miss Snyder.

ASSEMBLY EXERCISES: Miss Wilcox.

COLLEGE EXTENSION: Professor Kirkbride, Chairman; Miss Null, Miss Snyder.

COURSES AND DEGREES: Professor Wilkinson, Chairman; Professor Sypherd, Professor Drake.

LIBRARY: Professor Harter, Chairman; Miss Pratt, Professor Bevan.

PUBLICITY: Mr. Rees, Chairman; Miss Parkhurst, Miss Calef.

SCHEDULE: Professor Foster, Assistant Professor Rees.

SCHOLARSHIP: Professor Vaughn, Chairman; Professor Sypherd, Professor Clark, Professor Wilkinson.

SOCIAL AFFAIRS: Miss Kelly, Chairman; Professor Kirkbride, Miss Calef.

The Dean of the Women's College is ex-officio a member of all committees of the Academic Council.

For University Faculty Committees, see page 17.

GENERAL STATEMENT

The Women's College is the outgrowth of the desire of the people of the State to provide higher education for its young women, expressed by the Delaware State Federation of Women's Clubs, the Delaware State Grange, the Delaware Association of College Women, and other organizations, and finally crystallized as the will of the people by the Act of the State Legislature, in March, 1913, which provided for the establishment of a college for women to be affiliated with Delaware College, the appointment of a commission to erect and equip buildings, and the appropriation of funds for this purpose. The members of the Commission were: Honorable Charles R. Miller, Governor of the State; Honorable George W. Marshall, M. D., President pro-tempore of the Senate; Honorable Chauncey Holcomb, Speaker of the House; Dr. George W. Twitmyer, followed by Mr. Harry Hayward, representing the State Board of Education; Mrs. A. D. Warner, representing the Delaware State Federation of Women's Clubs; Mr. S. J. Wright, representing the Trustees of Delaware College.

BUILDINGS AND GROUNDS

The Women's College is located at the southern end of the University campus. The buildings are of colonial brick, with the exception of the home economics practice house, which is of stucco, and the temporary dormitories, which are of wood. For a detailed statement, see pages 11 and 12.

AIMS AND PURPOSES

The aims and purposes of education in general are the same for women as for men—the stimulation of their intellectual life, the increase of their breadth of vision, the development of scientific accuracy, the

creation of an interest in community, state, national, and international affairs.

The specific aims of a college for women are to cultivate executive ability, self-control, and willingness to subordinate immediate advantage to the future good; in short, to train for leadership in all those phases of life for which women naturally take the burden of responsibility.

SCOPE OF THE WORK

The Women's College offers instruction in the following schools:

School of Arts and Science—A four-year course of study leading to the degree of Bachelor of Arts or Bachelor of Science.

School of Education—A four-year course of study leading to the degree of Bachelor of Science in Education.

—A two-year course of study. leading to a teacher's diploma.

School of Home Economics—A four-year course leading to the degree of Bachelor of Science in Home Economics.

REQUIREMENTS FOR ADMISSION

Candidates for admission to the Freshman class must be at least 16 years of age and of good moral character. They must (1) be graduates of standard four-year high or preparatory schools, or (2) have spent four full years as students in such schools, and in addition sustain examinations at the University in **all** subjects which they present for entrance. The examinations are given on the days prescribed in the calendar of the University. All candidates, whether or no they are graduates of high schools, are required to present 15 units as entrance credits.

Students should enter at the beginning of the first term. Applicants will not be permitted to enter the College after the beginning of the first term, unless they have completed an amount of work equivalent to the work already done by the classes which they wish to enter.

All applications and credentials should be sent to the Dean of the Women's College.

SPECIFIC REQUIREMENTS

Fifteen units are required for entrance.

A unit, according to a statement formulated by the National Conference Committee on Standards of Colleges and Secondary Schools, represents a year's study in any subject in a secondary school, constituing approximately a quarter of a full year's work. This definition applies to all subjects except English, in which four years' work counts for three units. A four-year secondary school curriculum should be regarded as representing not more than sixteen units of work.

The foregoing statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the

school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute periods or their equivalent.

REQUIRED UNITS FOR ADMISSION

	Arts and Science Units	Education Units	Home Economics Units
English* (4 years)	3	3	3
Mathematics—			
Algebra	1	1	1
Plane Geometry	1	1	1
Foreign Language**	2	2	2
History	1	1	1
Science	1	1	1
	9	9	9
Elective	6	6	6
Total	15	15	15

ELECTIVES

Elective units sufficient to bring the total number up to 15 must be offered from the following list:

*Applicants for admission must present four years of English. If they have pursued this study five periods a week throughout the four years of their high school course they may receive four units of credit.

Latin, Greek, French, German, Spanish. All applicants must present two units in one foreign language or be conditioned and required to take one year of foreign language in college without credit. This requirement may **not be satisfied by the presentation of one unit in one language and one unit in another language.

Foreign Languages	
Greek	2 units
Latin	2 units
French	2 units
German	2 units
Spanish	2 units
History	
Ancient	1 unit
Medieval and Modern	1 unit or 2 units
English	1 unit
American	½ or 1 unit
Civics	½ unit
Science	
Botany	½ or 1 unit
Chemistry (See Note 6)	½ or 1 unit
Physics (See Note 6)	½ or 1 unit
Physical Geography	½ or 1 unit
Physiology	½ unit
Zoology	½ or 1 unit
Biology	½ or 1 unit
General Science	1 unit
Vocational Subjects	See Note 5

Note 1. All applicants are required to present a minimum of 15 units; and no condition is permitted in any subject except as provided for Foreign Language in note page 162, bottom. Beginning with 1924, no applicant will be admitted with any conditions.

Note 2. Candidates for the degree of Bachelor of Arts must offer four years of Ancient Language (4 units of Latin, or 2 units of Latin and 2 units of Greek) for entrance, or complete in college what they lack of this requirement.

Note 3. All candidates for admission are examined in English composition in order to test their ability to do the required English of the Freshman year. Examinations are held in June and September. Candidates are advised to take the examinations in June. Those who fail will have the opportunity of working

privately on the subject during the summer or of taking a course in English in the six weeks' Summer Session.

Note 4. Applicants who present a Modern Foreign Language for entrance and expect to continue the subject will be required to take a test given by the Modern Language department in order that they may be placed in the class in which they are qualified to do satisfactory work. This test will not affect the value of their credits in the subject in so far as entrance is concerned. Conditions in Foreign Languages must be made up by means of additional work in College.

Note 5. Elective units in vocational subjects to the number of three will be accepted from graduates of the four-year Smith-Hughes High School course. Graduates from this course may also offer for entrance two units from the list on page 163 in place of the regular requirement in Foreign Language.

Note 6. Chemistry and Physics should include laboratory work and experiments by the pupil in accordance with national standards. Where such laboratory and experiment work has not been done, only ½ unit of entrance credit will be given for the year's work in the subject.

For a detailed explanation of the requirements for admission, and for dates of entrance examinations, see the Delaware College Section of this catalogue, pp. 31 ff.

REQUIREMENTS FOR GRADUATION

Candidates for graduation in all courses are required to complete 120 credit term-hours of work in addition to twelve term-hours of Physical Training.

In order to qualify for graduation, a student must also obtain sixty honor points, these honor points to be estimated on the basis of two points for the grade of "A" in a one-credit hour course and one point for the grade of "B" in a one-credit hour course.

SCHOOL OF ARTS AND SCIENCE

The Arts and Science courses are designed to meet the requirements of a liberal education. In accordance with this general aim, considerable freedom in the choice of studies is allowed, particularly in the last two years of the course. The studies of the Freshman year are virtually prescribed.

Arts and Science students who contemplate teaching in the high schools of Delaware must take Psychology 1, Education 7, and Education 9 or 10 in order to meet the requirements for certification.

Graduates from the course in Arts and Science who have offered for admission four years of Latin or Greek or who have completed in college an equivalent amount of work will receive the degree of Bachelor of Arts; all other graduates will receive the degree of Bachelor of Science.

PRESCRIBED STUDIES

English	18
Mathematics	6
Modern Language	12
History and Economics	12
Science (Chemistry, Biology, or Physics)	12
Electives	60
Physical Training	—
	120

FRESHMAN YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 1	3	English, 2	3
Mathematics, 3	3	Mathematics, 4	3
Language—Latin, Spanish, French, or German	3	Language—Latin, Spanish, French, or German	3
History, 1	3	History, 2	3
Elective—One subject (Biology, Physics, Chemistry, Greek, Latin)	3	Elective—One subject (Biology, Physics, Chemistry, Greek, Latin)	3

SOPHOMORE, JUNIOR, AND SENIOR YEARS

At the beginning of the Sophomore year every candidate for the degree of Bachelor of Arts or Bachelor of Science shall elect from the following list of subjects a major study, in which she shall complete thereafter 18 hours of work.

During these three years students must take, in addition to the required work in Physical Training, all prescribed subjects not completed in the Freshman year and elective courses sufficient to make a total of thirty credit term-hours each year.

MAJOR ELECTIVES

Biology
Chemistry
English
French or German
Greek or Latin
History and Economics
Mathematics and
Physics

ELECTIVE COURSES 1922-1923

	1st Term	*2d Term*
Ancient Languages, 1 and 2, 3 and 4, 5 and 6	3	3
Ancient Languages, 21 and 22, 23 and 24	3	3
Bacteriology, 1, 2	3	3
Biology, 1, 2, 3, 4	3	3
Biology, 5, 6	3	3
Biology, 12	–	3
Chemistry, 1, 2	3	3
Chemistry, 5, 6	3	3
Chemistry, 7, 8	3	3
Chemistry, 9, 10, 11, 12	3	3
Education, 11, 12	3	3
Education, 21, 22	3	3
Education, 23, 24	1.5	1.5
Education, 26	–	3
Education, 32	–	3
Education, 47, 48	3	3
English, 11, 20	3	3
English, 27	3	–
English, 34	–	3

	1st Term	2d Term
English, 39	3	–
English, 45, 46	3	3
Fine Arts, 1, 3	3	–
Fine Arts, 2, 4, 6	–	3
Fine Arts, 5	3	–
Fine Arts, 8, 9	2	2
Fine Arts, 11, 12	3	3
History, 15, 16	3	3
History, 21, 22	3	3
History, 25, 26	3	3
History, 27, 28	3	3
History, 29, 30	3	3
History, 31, 32	3	3
Home Economics, 1, 5, 11	3	–
Home Economics, 2, 4, 6	–	3
Mathematics, 3, 5	3	–
Mathematics, 4, 6	–	3
Modern Languages, see pages 198 ff.		
Music, 5 and 6	3	3
Philosophy, 5, 4	3	3
Physics, 1, 2, 3, 4	3	3
Physiology and Hygiene, 1, 2	3	3
Psychology, 31, 32	3	3
Sociology, 1, 2	3	3

SCHOOL OF EDUCATION

Purposes

The primary purpose of the School of Education is to prepare candidates for the profession of teaching. Preparation for teaching is assumed to include (1) a broad general or liberal education, (2) proficiency in the specific and related subject-matter which the candidate expects to teach, and (3) professional training including an acquaintance with educational theory and the acquisition of skill, gained through supervised practice, in the technique of teaching and classroom management.

Secondarily, the School of Education seeks to cooperate with other agencies and to render such other services as may be practicable in promoting the educational interests of the state. Lines along which such service may now be rendered include the giving of extension courses for teachers in service; co-operating with superintendents and school officials in making educational measurements; supplying teachers in service with such materials, helps and exhibits as may grow out of the regular work of the various departments; participation by members of the staff in teachers' institutes, educational conferences, parent-teacher meetings, etc.

Admission

To be admitted as a "regular" student the candidate must fulfill the requirements stated elsewhere in this catalogue, pp. 161 ff.

In exceptional cases a student lacking some of these qualifications but who is 21 years of age or over, has had experience in teaching, and gives evidence of being able to pursue the courses desired may be admitted as a "special" student. No "special" student may receive a degree or teacher's diploma until she has sat-

isfied the requirements for admission as a "regular" student.

Curriculum for Elementary Teachers

In the absence of any other institution in the State for the preparation of teachers for elementary schools the School of Education offers the following two-year curriculum designed to meet this need.

			First Term	*Second Term*
		First Year		
Ed	11	Introduction to Teaching	3	–
Ed	12	Observation and Participation	–	3
Ed	13-14	The Teaching of Geography and Elementary Science	3	3
Ed	17	The Teaching of Arithmetic	3	–
B	1-2	Biology	3	3
E	1-2	English Composition	3	3
FA	5	Appreciation of Art	2	–
FA	8	Drawing and Industrial Arts	–	2
PH	4	Hygiene and Sanitation	–	3
Mu	1-2	Public School Music	1	1
P	9-10	Physical Education and Games	–	–
		Second Year		
Ed	21-22	Directed Student Teaching	3	3
Ed	23-24	The Teaching of English	3	3
Ed	26	The Teaching of History and Civics	–	3
Ed	27	Educational Measurements	2	–
Fa	9	Drawing and Industrial Arts	2	–
H	5-6	United States History	3	3
Psy	32	Child Psychology	–	3
Mu	3-4	Public School Music	1	1
P	11-12	Physical Education and Supervision of Play	–	–

Upon the satisfactory completion of this curriculum the student is awarded an Elementary Teacher's Diploma. This diploma from the College is accepted by the State Department of Education as meeting the requirements for a first-grade elementary teacher's certificate in Delaware.

Students who are preparing to teach in rural schools may substitute for certain courses in the fore-

going list such subjects as Rural School Management, Rural Sociology, General Agriculture, etc.

The Degree of Bachelor of Science in Education

The degree of B. S. in Education is conferred by the University upon students who fulfill the requirements for graduation from the School of Education. The degree is awarded in accordance with the following regulations:

1 The candidate must have satisfied in full the entrance requirements to the College.

2 She must complete 120 credit hours of work exclusive of physical education, and earn an average of 15 honor points per year for each year spent in the College.

3 The following subjects are required of all candidates for the degree:

	Credit hours
English	12*
Foreign Language	12
History	6
Biological Science	6
Physical Science or Mathematics	6
Sociology, Economics	6
Psychology	6
Education	18

4. Candidates who are preparing to teach in secondary schools must offer for graduation (1) from 18 to 24 hours work in one academic subject, the exact number of hours depending on the subject chosen; (2) 18 hours in a second academic subject; (3) 6 hours in Secondary Education. Courses required under rule 3 may be counted toward the fulfillment of these requirements.

*Students who do not attain a satisfactory standard in English are required to take additional work in this subject.

5 Students who are specializing in the field of elementary education may substitute for the requirements of rule 4 such courses in academic subjects and in Elementary Education as may be approved by the faculty upon the recommendation of the committee on Courses and Degrees.

High School Teacher's Diploma

The High School Teacher's Diploma is conferred by the College upon students who have completed all requirements for the Bachelor's degree and who have taken, as a part of the work offered for the degree, not less than 12 hours in Education and 6 hours in Psychology. Of the 12 hours in Education at least 6 hours must be in the field of Secondary Education.

This diploma is accepted by the State Department of Education for certification to teach in high schools.

Professional Courses for Students in Arts and Science

Certain courses in Education and Psychology are open, as electives, to students in the School of Arts and Science (see Elective Courses, page 166). If these courses are taken with a view to meeting requirements for certification to teach they should be chosen with the advice of the Director of the School of Education, or of the Superintendent of Public Schools in the State in which the candidate expects to teach. Arts and Science students may receive the High School Teacher's Diploma by fulfilling the conditions stated in the preceding paragraph.

Advanced Standing

Advanced credit toward the degree of B. S. in Education is allowed for such courses taken in other standard Colleges or Schools of Education as are the equivalent of the courses given in the School of Edu-

cation of the University of Delaware. In general, graduates of the two-year curriculum in the School of Education, or of an equivalent two-year course in an approved normal school, may be awarded the degree of B. S. in Education upon the satisfactory completion of 60 credit hours of additional college work, these 60 hours to include all prescribed courses and requirements not previously satisfied.

Satisfactory work done in approved summer schools may be counted toward the Elementary Teacher's Diploma or the degree of B. S. in Education in so far as the courses taken may be regarded as the equivalent of courses required in the School of Education.

The granting of advanced standing is conditioned in all cases upon the student's having satisfied the regular entrance requirements. The Women's College reserves the right to decide just how much advanced credit shall be allowed in any given case.

Directed Student Teaching

Arrrangements have been made with the Newark Public School authorities whereby opportunities for directed observation and student teaching in the local schools are provided. Certain teachers in the local schools serve as co-operating teachers for this work. For students in the two-year course the work consists of observation, participation, graded individual group and classroom teaching in the various subjects of the elementary school curriculum, including music, art, and play, in the first six grades. Prospective high school teachers do their observing and teaching in the high school where usual secondary school conditions prevail. In addition, the Opportunity Class of the local schools, an ungraded group of children, is utilized for experimental work in Psychology and in methods of dealing with special classes of pupils.

All of this work is done under the general supervision of the Director of Student Teaching of the

School of Education, in co-operation with the superintendent of the Newark Schools and with the assistance of the heads of certain departments in the Women's College. This connection with the local schools is used both as a means of imparting skill in the technique of teaching and as a laboratory for much of the work in Psychology and the theoretical courses in Education.

Scholarships for Students in Education

To encourage young women to make adequate preparation for teaching in elementary schools the State Board of Education has been giving, and will continue to give for the year 1922-23, a limited number of scholarships in Education. Each scholarship amounts to $150.00 a year for two years which sum covers approximately one-half of the student's room and board expenses in the College while taking the two-year course for elementary teachers. The scholarships are awarded in accordance with rules adopted by the State Department of Education in co-operation with the Director of the School of Education of the Women's College. All applications for scholarships, and requests for information concerning them, should be addressed to the State Superintendent of Public Instruction, Dover, Delaware.

Courses for Teachers in Service

Upon the request of a sufficient number of teachers in service, or of the proper school officials, certain courses will be given at such centers as may suit the convenience of the groups concerned. Courses suited to the needs of both elementary and secondary teachers may be arranged for. Credits earned in these courses may be applied, in the case of students qualified to meet entrance requirements, toward the Elementary Teacher's Diploma or the degree of B. S. in Education.

Appointment Committee

The Appointment Committee of the Women's College is maintained for the purpose of assisting students in securing desirable positions. While the activities of the Committee are not restricted to the members of any particular School or Department of the College or special type of employment, yet one of its principal functions has to do with the placement of worthy candidates for teaching positions. It keeps on file a record of such information, including scholarship, technical training, experience, etc., as will make possible the largest measure of service both to the candidate and to the prospective employer.

The services of the Committee are not limited to present members of the student body but are at the disposal of alumnae and former students of the College. All communications looking to a change of position will receive prompt attention by the Committee.

SCHOOL OF HOME ECONOMICS

The courses in Home Economics are designed to meet the needs of students who intend to teach homemaking in the secondary schools or who wish to apply the knowledge gained from this source to the management of the home.

Students who do not wish to teach may substitute courses of equal value for the required courses in Psychology and Education.

PRESCRIBED STUDIES

English	12
Economics and Sociology and History	15
Chemistry	12
Physics	6
Bacteriology	6
Physiology	6
Fine Arts	6
Education	6
Home Economics	36
Electives	15
Physical Training	—
	120

FRESHMAN YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 1	3	English, 2	3
Chemistry, 1 or 11	3	Chemistry, 2 or 12	3
History, 5	3	History, 6	3
Home Economics, 1	3	Home Economics, 2	3
Fine Arts, 3	3	Home Economics, 4	3

SOPHOMORE YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 5	3	English, 6	3
Chemistry, 7	3	Chemistry, 8	3
Physiology, 1	3	Physiology, 2	3
Home Economics, 5	3	Home Economics, 6	3
Physics, 1	3	Physics, 2	3

JUNIOR YEAR

First Term	*Credits*	*Second Term*	*Credits*
Psychology, 1	3	Education, 4	3
Bacteriology, 1	3	Bacteriology, 2	3
Home Economics, 9	3	Home Economics, 10	3
Home Economics, 11	3	Fine Arts, 6	3
Elective	3	Elective	3

SENIOR YEAR

First Term	*Credits*	*Second Term*	*Credits*
Economics, 25	3	Economics, 26	3
Home Economics, 19	3	Home Economics, 20	3
Home Economics, 13	6	Sociology	3
Elective	3	Elective	6

SUBJECTS OF INSTRUCTION

By Departments

In this detailed statement of the subjects of instruction, the number of credit term-hours is printed in italics at the end of each course. If the actual hours of recitation, lecture, and laboratory work differ from the credit hours, the number of actual hours is stated immediately before the credit hours.

Odd numbers are assigned to first-term courses; even numbers to second-term courses.

Credits for laboratory work depend upon the nature of the work and the amount of preparation required. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour.

ANCIENT LANGUAGES AND LITERATURES

Professor Conover

Throughout the course the aim is to enable the student to acquire facility and quickness in reading at sight and familiarity with the ancient order of thought. Word-meaning is fixed by inspecting form, derivation, and comparison with synonyms. The authors are selected with a view to their representative character. The public and private life of the Greeks and Romans and their influence on modern literature and civilization are continually kept before the minds of the students. English derivatives and words kindred to all Indo-European tongues are frequently noted, and the general principles of comparative philology are explained and applied.

LATIN

Professor Conover

AL 1 and 2 Cicero, De Senectute and De Amicitia. Ovid, Metamorphoses, etc. Prose Composition.

Six credit hours

AL 3 and 4 Livy, 21st or 22nd book. Horace, Odes, Epodes, Satires, Epistles. Prose Composition.

Six credit hours

AL 5 and 6 Tacitus, Germania and Agricola. Plautus, Captives and Trinummus. Juvenal, Satires.

Six credit hours

AL 7 and 8 Seneca, Tragedies or Moral Essays. Terence, Adelphoe and Andria. Quintilian, Books X and XII. Lectures on Latin Literature and Inscriptions.

Six credit hours

GREEK

AL 21 and 22 White's First Book. Anabasis I, II.

Six credit hours

AL 23 and 24 Anabasis III, IV. Homer, Iliad, I-III. Herodotus, VII, VIII.

Six credit hours

AL 25 and 26 Lysias, Orations. Plato, Apology and Crito. Aristophanes, Plutus or Clouds.

Six credit hours

BACTERIOLOGY

PROFESSOR PALMER AND MR. HITCHNER

Ba 1 General Bacteriology. A lecture and laboratory course, including the morphology, biological characters, distribution, and classification of bacteria and their relation to plant and animal life. In the laboratory the student will be instructed in the technique necessary for practical work in bacteriology, including cleaning and sterilization of apparatus, making culture media, and studying bacteria in cultures and under the microscope. Required of Juniors in Home Economics and elective for Juniors and Seniors in Arts and Science. One lecture and six laboratory hours a week. Fee $2.00.

Three credit hours

Ba 2 Sanitary Science. (Prerequisite: Ba 1). A study of our environment in its relation to health and disease, including food, water, air, soil, disposal of wastes, vital statistics, diseases of occupation, industrial hygiene, and public health. Provision is to be made for at least five field trips to study rural

and urban conditions affecting public health. Required of Juniors in Home Economics and elective for Juniors and Seniors in Arts and Science.

Three credit hours

BIOLOGY

MISS CALEF AND DEAN ROBINSON

B 1 General Biology: Part 1. Zoology. A general treatment of the principles of biology and a survey of the animal kingdom from protozoa to the mammals. The biological and economic significance of each group is discussed in lectures. The laboratory periods are devoted to a study of the structure of representative animals, and to field trips. Two lecture periods, two two-hour laboratory periods, and assigned reading each week. Laboratory Fee, $2.50.

Three credit hours

B 2 General Biology: Part II. Botany. (Prerequisite: B 1). A survey of the plant kingdom from one-celled forms to flowering plants, inclusive. The biological and economic significance of each group is discussed in lectures. The laboratory periods are devoted to a study of the function and structure of the parts of representative plants, and to field work, whereby the student may become familiar with the flowers, trees, shrubs, and weeds of the region. Two two-hour laboratory periods and two lecture periods, with assigned reading each week. Laboratory fee, $2.50.

Three credit hours

B 3 Physiology of Plants. (Prerequisite: Six credit-hours of Biology). This course treats of the activities of plants: their irritability, nutrition, growth, and reproduction. The various phases are discussed and illustrated by laboratory experiments. Two lectures and four laboratory hours a week, with assigned reading. Laboratory fee, $2.50.

Three credit hours

B 4 Systematic Botany. (Prerequisite: Six credit hours of Biology). This course is largely field work and deals with the identification of trees, shrubs, and herbs in both winter

and summer condition, and with their systematic position. Laboratory fee, $2.50.

Three credit hours

B 5 Comparative Anatomy. (Prerequisite: Six credit hours of Biology). This course deals with the comparison of representative chordates from amphioxus to mammals. Typical chordates are dissected in the laboratory and the evolution of their anatomy studied. It is suggested that this course be succeeded by Embryology. Two lecture periods, two two-hour laboratory periods, and assigned readings. Laboratory fee, $2.50.

Three credit hours

B 9 Elementary Science for Teachers. A study of the common plants and animals of the locality. Little attention is given to the systematic position of the forms studied, but the economic significance of insects, weeds, trees, birds, etc., is discussed in lectures. Phenomena specially interesting and instructive to the child will be discussed. Laboratory hours will be devoted to observations of these phenomena both indoors and in the field. Two two-hour laboratory periods and two one-hour lecture periods a week. Laboratory fee, $2.50.

Three credit hours

B 6 Embryology. (Prerequisite: Nine credit hours of Biology, three of these in Comparative Anatomy). An introduction to the fundamental facts of reproduction and embryology. The lectures will be based on the laboratory work which will include a study of the sex cells, maturation, fertilization, types of cleavage, formation and early development of the vertebrate embryo. Emphasis will be placed on the embryology of the chick which will be supplemented by comparison with other forms. Two lecture periods, two two-hour laboratory periods, and assigned readings. Laboratory fee, $2.50.

Three credit hours

CHEMISTRY

PROFESSOR DRAKE AND MISS WILLIM

C 1 and 2 Inorganic Chemistry. This course includes a study of the fundamental laws of chemical action, the proper-

ies, uses, and methods of preparation of the elements and heir compounds. In the laboratory the student performs experiments illustrating the topics in the lectures. Freshman year. Two demonstrations, one recitation, and four laboratory hours. Laboratory fee, $2.50 per term.

Six credit hours

C 3 Qualitative Analysis. (Prerequisite: C 1 and 2). The identification and separation of the metals and of the acids are taught. The systematic analysis of simple and complex substances is taken up and a few commercial products are analyzed. Sophomore or Junior year. One lecture and six laboratory hours. Laboratory fee, $2.50. [Omitted in 1922-23].

Three credit hours

C 4 Quantitative Analysis. (Prerequisites: C 1 and 2). This is an elementary course in which the simpler methods of gravimetric and volumetric analysis are studied. Sophomore or Junior year. Second term, one lecture and six laboratory hours. Laboratory fee, $2.50. [Omitted in 1922-23].

Three credit hours

C 5 and 6 Organic Chemistry. (Prerequisite: C 1 and 2). This course includes a study of the important classes of organic compounds, the methods of preparation, reactions, relations to each other, and structural formulas. In the laboratory organic compounds are prepared, illustrating important types of reactions, and their qualitative reactions studied. Sophomore or Junior year. One lecture and six laboratory hours. Laboratory fee, $4.00 per term.

Six credit hours

C 7 and 8 Household and Food Chemistry. (Prerequisite: C 1 and 2). This course is designed to meet the needs of the students in Home Economics. After a brief introduction to organic chemistry it treats of the chemistry of foods, beverages, baking materials, preservatives, etc., and the elementary physiological chemistry of the digestive tract. Sophomore year. One lecture and six laboratory hours. Laboratory fee, $4.00 per term.

Six credit hours

C 9 and 10 Physiological and Food Chemistry. (Prerequisites: C 1 and 2, 4, 5 and 6). This course is designed for Seniors majoring in chemistry. It treats in considerable detail the chemistry of fats, carbohydrates, and proteins, the physiological chemistry of digestion, the blood, animal heat, etc. Part of the time will be devoted to the quantitative analysis of typical food products, such as milk, cereals, etc. Senior year. One lecture and six laboratory hours. Laboratory fee, $4.00 per term.

Six credit hours

C 11 and 12 Inorganic Chemistry. A course designed to meet the needs of students who have had one year of high school chemistry. After a review of the fundamental laws of chemical action, emphasis is laid on elementary analytical chemistry and inorganic preparations. Students may be admitted to this course only on the presentation of their high school note books with a statement of the number of hours spent in the laboratory and classroom. Two lectures and five laboratory hours a week. Laboratory fee, $2.50 per term.

Six credit hours

EDUCATION AND PSYCHOLOGY

PROFESSOR WILKINSON, ASSISTANT PROFESSOR ROHR, MISS SNYDER, AND DR. BAMBERGER

Ed 11* (Formerly Ed 1) **Introduction to Teaching.** This is a general survey course designed to give the student acquaintance with the fundamental principles underlying modern educational theory. The course is centered around the consideration of the aims of education, the character of original nature, and the laws of learning. Each principle proposed is illustrated in the demonstration school, and a working theory of educational practice is built up through a discussion of the observation thus made.

Three credit hours

Ed 12 (Formerly Ed 2) **Observation and Participation.**

*The first figure in a course number indicates the year in which the course should ordinarily be taken.

This course is designed to serve as a link between Ed 11 and Ed 21. Application of the principles worked out in Ed 11 is made to such class-room problems as: lighting, heating, and seating arrangements; management of materials, dismissals, assemblies, recesses; records and reports; testing children's progress; planning work for the year, month, day; studying children as groups and as individuals; lesson types—drill, problem, construction, appreciation. The students observe and participate in the foregoing activities.

Three credit hours

Ed 13 and 14 The Teaching of Geography and Elementary Science. This course includes a survey of the physical, industrial, and political geography of each continent with a consideration of the fundamental principles underlying geographic controls. The study begins with the home and its environs and widens to include the State and the United States and finally all continents and countries. Much attention is given to the physical conditions which influence the production of raw materials, especially those that enter into food, clothing, and shelter, the development of manufactures, the laying out of routes, the location of markets and the distribution of raw and manufactured articles. The use of the problem-project method is demonstrated. Suggestions for the use of pictures, specimens, maps of various kinds, etc., are given.

Three credit hours

Ed 17 The Teaching of Arithmetic. This course deals with the subject-matter and methods of teaching arithmetic in elementary schools. It considers projects suitable to the several grades through which work in arithmetic may be motivated, and it stresses the use of business methods, the selection of practical material, the elimination of subject-matter that does not function in life, and the use of systematic drills to fix habits of speed and accuracy. Subject-matter is taught along with the methods, and tests for speed and accuracy are given at intervals both to locate weaknesses in the class that need to be worked on and to illustrate their use with children.

Three credit hours

Ed 21 and 22 (Formerly Ed 9 and 10) **Directed Student Teaching.** The work of this course consists of the preparation of lesson plans, the collection of materials, the keeping of records, making reports, and graded individual group and classroom teaching in the various subjects of the elementary school curriculum including music, art, and play, in the first six grades. All of this work is done under the supervision of the Director of Student Teaching, in co-operation with the Superintendent and co-operating teachers in the Newark public school and the heads of certain departments in the Women's College.

Six credit hours

Ed 23 and 24 (Formerly Ed 11 and 12). **The Teaching of English.** This course includes (a) practice in correct usage through drills suitable for use in elementary grades; (b) practice in written language work of various types with discussions of projects through which such work can be motivated for children and of special methods of teaching written language; (c) the presentation of principles and methods of teaching silent and oral reading, and a survey of the literature suitable for use in the various grades, with methods of teaching it.

Three credit hours

Ed 26 (Formerly Ed 16). **The Teaching of History and Civics.** This course aims to give the modern point of view regarding the teaching of history and civics in the elementary school. It stresses the fact that the chief aim of history teaching in the grades is not to give information about the past, but to enable the learner to interpret present conditions and to solve present problems more intelligently. It therefore emphasizes the industrial and social aspects of the subject. The course deals largely with the history of the United States and Delaware, though some attention is given to European history as a background. Many possible problems are discussed and outlined and some illustrative ones are worked out in class. Special attention is given to methods of study, use of textbooks, supplementary materials, etc.

Three credit hours

Ed 27 Educational Measurements. A course designed to acquaint students with, and give them practice in the

use of, standard tests and scales for measuring the results of teaching in elementary school subjects. The work includes the giving of tests, scoring, tabulating, and interpreting the results.

Two credit hours

Ed 32 (Formerly Ed 4) **Principles of Education.** (Prerequisite: Ed 11 or Psy 31). This course begins with a brief review of present-day tendencies and practices in education; traces the origin and development, since the time of Rousseau, of important educational ideals with reference to such problems as aims, curriculum-making, methods of teaching, organization, etc., and seeks to integrate the principles derived into a unified body of educational doctrine.

Three credit hours

Ed 33 Supervision of Elementary Instruction. This course is designed to meet the needs of teachers in service, or of students who have had experience in teaching, who wish to prepare for the work of supervision. It includes the study of such problems as, how to diagnose and correct a school situation through the use of age-grade distribution, intelligence examinations, and standard tests; how to judge and improve the value of various types of instruction, class-management, textbooks, curricula, extra-mural activities. This course is open only to students who have had experience in teaching and considerable training in Elementary Education.

Three credit hours

Ed 41 The Technique of High School Teaching. (Prerequisite: Psy 31 or 32). This course aims to give the student insight into and some command of accepted principles and methods of high school instruction and class-room management. It combines practice in the use of standard intelligence and achievement tests now available for determining the efficiency of instruction with those matters of technique that make for effective class-room teaching. Discipline and student morale, economy in class-room routine, lesson-planning, supervised study, the socialized recitation, and methods of motivating school work are among the topics treated.

Three credit hours

Ed 42 Principles of Secondary Education. (Prerequisites: Psy 31 or 32 and Ed 41 or 47). This course begins with a brief history of secondary education in the United States; compares secondary education in this country with that in certain European countries; examines current tendencies and practices with respect to aims, organization, curricula, and methods of teaching; seeks to organize the principles learned into a sound working theory of secondary education.

Three credit hours

Ed 47 or 48 Directed Student Teaching in High School. (Prerequisite: Psy 31 or 32). Open to Seniors who are preparing to teach in secondary schools. Each student is given opportunity to teach the subject in which she is majoring and one other subject. The course consists of one group conference hour a week, individual conferences as needed, and 30 hours of teaching.

Three credit hours

Psy 31 (Formerly Psy 1) **Psychology: Introductory Course.** This course aims to give the student such a knowledge of the factors and laws of human behavior as the teacher needs to possess. It includes a study of such topics as instincts and native capacities, methods and laws of learning, individual differences, and mental hygiene.

Three credit hours

Psy 32 (Formerly Psy 2) **Child Psychology.** (Prerequisite: Ed 11 or Psy 31). The course aims to follow the development of child life in its various aspects from infancy through adolescence. Two lecture hours are correlated with one hour of directed observation of children and with individual problems involving psychological testing.

Three credit hours

Psy 34 Psychology: Advanced Course. (Prerequisite: Psy 31 or 32. A more intensive study of certain psychological problems, making use of the experimental method of investigation and emphasizing the applications of the facts learned.

Three credit hours

ENGLISH

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. VAN KEUREN, AND MR. BLAIR

The courses in the Department of English are designed (1) to enable every student at graduation to express her ideas, orally or in writing, in accurate, clear, effective English; and (2) to give to students through required and elective work an acquaintance with the best authors in English and American Literature and an appreciation of good poetry and prose. All Freshmen are required to take Composition, which involves training in oral and written expression; all Sophomores, a general course in Literature, which treats of writers, types, and movements. Seniors in Arts and Science are required to take an additional course in English. Elective courses for 1922-1923 are: First term, E 11, Advanced Composition; E 27, The Bible; E 39, Emerson; E 45, Victorian Poetry. Second term, E 20, Shakspere; E 34, American Literature; E 46, The Novel.

E 1 and 2 Composition. An elementary course which lays especial stress on accuracy and clearness in expression. Recitations, themes, practice in public speaking, conferences, and outside readings. Required of all Freshmen.

PROFESSOR DUTTON, MR. VAN KEUREN, AND MR. BLAIR
Six credit hours

E 5 and 6 Literature. General Survey A brief survey of the history of the English language and literature, followed by a more detailed and thorough study of the main literary forms—narrative and lyric poetry, the drama, the novel, and the essay. Discussions, lectures, outside readings, reports, and conferences. Required of all Sophomores.

ASSOCIATE PROFESSOR FOSTER AND MR. VAN KEUREN
Six credit hours

E 9 and 10 Composition and Literature. A study of the English essay with exercises in expository writing, first term; a study of the short-story in English, with exercises in narrative writing, second term. Required of Seniors in Arts and Science.

PROFESSOR SYPHERD *Six credit hours*

E 11 [12] Composition. An advanced course in narrative and descriptive writing. Themes, outside reading, and con-

ferences. Elective for Sophomores and Juniors in Arts and Science.

MR. VAN KEUREN *Three credit hours*

E 15 Literature. Romantic Movement. A study of the social, philosophical, and literary tendencies which are found in the prose and poetry written between 1798 and 1832. Elective for Juniors and Seniors. [Omitted in 1922-1923].

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 20 [19] Literature. Shakspere. The Elizabethan stage; social, political, and literary conditions; a study of selected plays. Elective for Juniors and Seniors.

PROFESSOR SYPHERD *Three credit hours*

E 22 [21] Literature. Modern Drama. A cursory view of the English drama since Shakspere. Recent and contemporary European drama (Continental plays in translation). Elective for Juniors and Seniors. [Omitted in 1922-1923].

MR. BLAIR *Three credit hours*

E 27 [28] Literature. A literary study of the Bible. This course is an introduction to the literary study of the English Bible. It involves a general consideration of the contents and the composition, a brief review of the history of the Translations or Versions, a discussion of the literary forms and the literary qualities, and a study of its influence in English Literature.

PROFESSOR SYPHERD *Three credit hours*

E 31 [32] Literature. Classics in Translation. A study of Greek and Roman classics which have influenced English Literature and English thought. Elective for Juniors and Seniors. [Omitted in 1922-1923].

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 34 Literature. A general survey of the field of American Literature from Franklin to the present time and an intensive critical study of the most important work of the chief American poets and prose writers. Lectures, recitations, outside reading, and reports. Elective for Sophomores and Juniors.

PROFESSOR DUTTON *Three credit hours*

E 35 Literature. Chaucer. A critical and appreciative study of some of the Canterbury Tales and of the other poems of Chaucer. Elective for Juniors and Seniors. [Omitted in 1922-1923].

PROFESSOR SYPHERD *Three credit hours*

E 39 Literature. Emerson. A study of Emerson as poet, essayist, and philosopher. Elective for Juniors and Seniors.

PROFESSOR DUTTON *Three credit hours*

E 45 Literature. Victorian Poetry. This course is centered about the poems of Browning, Tennyson, Arnold, and Swinburne. The aim of the course is to obtain a knowledge of the poetry of the period, to study the poems as an expression of the philosophy of life of each of the poets, and to correlate this poetry with the social movements of the time. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 46 Literature. Nineteenth Century Novel. A study of the main novelists of the century: Scott, Dickens, Thackeray, Eliot, Meredith, and Hardy. Collateral reading in the contemporary novel. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

FINE ARTS AND INDUSTRIAL ARTS

MISS TAYLOR

The courses in the Art Department are designed to meet the special needs of three distinct groups of students, (1) those taking the Arts and Science Course, (2) those taking the Home Economics Course, and (3) those who expect to teach in the elementary schools. Each group, therefore, has its special aims but the main objectives common to all courses are as follows:

A To acquaint the students with some of the greatest art of the world and awaken in them a keen appreciation of beauty as it occurs in nature and the plastic and graphic arts, to the end that this appreciation may add to the joy and pleasure of living.

B To cultivate the taste and judgment of students that their daily expressions may be in greater accordance with the laws of beauty—and to open up numerous avenues of worthwhile avocations.

C To provide a thorough technical foundation for anyone of especial ability who desires to take up some phase of art work as a profession.

FA 1 Art Appreciation and History. A study of the historical development of painting, sculpture, and design, preceded by study of the space arts, composition of line and mass, and color theory. Lectures are illustrated with slides and prints. Students are required to keep note books with prints and tracings. Three lecture hours.

Three credit hours

FA 3 Principles of Design. A course in the elementary principles of art structure, practice in the use of line, dark and light and color, with pencil, charcoal, crayon, brush and ink, and water color. Study of spacing, rhythm, color theory. Adaptions of given designs and practice in original design. Studio work five hours and lecture one hour.

Three credit hours

FA 4 Applied Household and Costume Design. This course supplements FA 3. Applications are made of design principles to problems of the home and costume. Study of house interiors in line, dark and light, and application of color harmony is taken up. Adaptions of given designs for costumes to definite figures are made, and practice is given in original costume design, and design for textiles to be applied as embroidery, stenciling, block printing. Studio work five hours and lecture one hour.

Three credit hours

FA 5 Art Appreciation. A course for elementary teachers. The course is similar to FA 1, but less emphasis is put on the historical development of painting, sculpture, and design, and greater emphasis on the elementary principles of art structure and color theory. Two lecture hours.

Two credit hours

FA 6 House Planning and Furnishing. An advanced course completing the work of FA 3 and 4. It includes drawing of house plans to scale, study of styles of architecture, period furniture, selection, framing and hanging of pictures, and

problems of furnishing from both the artistic and economic standpoint. Studio work five hours and lecture one hour.

Three credit hours

FA 8 and 9 Drawing and Industrial Arts. A course for elementary teachers offering practice in representation and illustration, blackboard drawing, lettering, composition, design, and color related to the regular school work. Problems in schoolroom decoration, interior decoration, and costume design. A study of some of the important industries of the country, involving simple problems in poster making, book-making, cardboard construction, weaving, claymodeling, etc. Studio work four periods per yeek.

Four credit hours

FA 11 and 12 Drawing and Painting. This course offers practice in line and tone, perspective, technique of charcoal and crayon, and painting in water color from still life, supplemented by study of modern art and art processes. Studio work five hours and lecture one hour.

Six credit hours

HISTORY AND POLITICAL SCIENCE

PROFESSOR VAUGHN, PROFESSOR BEVAN, AND MR. BLAIR

The courses in this Department are arranged in the approximate order in which they should be taken by the student. In the first two years certain courses are required; all other courses are elective for properly qualified students. Sophomores may, with permission of the Department, elect certain courses in addition to the required work. Courses 13 to 16 will usually be given in alternate years.

In all courses emphasis is placed upon systematic and thoughtful work, upon classroom discussion, and upon the problems of present-day citizenship.

H 1 and 2 Modern European History. A general survey of European history in its political and social aspects from 1500 to the present time. This course is designed for beginning students in history and affords the basis for advanced work in European history. Text-book, discussion, and collateral readings. Required of Freshmen in Arts and Science and Education.

PROFESSOR BEVAN AND MR. BLAIR *Six credit hours*

H 5 History of the United States (1763-1848). An advanced course in American history, embracing a study of the Revolutionary period, the formation of the Constitution, foreign relations, early national development, Jacksonian democracy, westward expansion, and the Mexican War. Required of Sophomores in Arts and Science, Home Economics, and the four-year course in Education.

PROFESSOR VAUGHN *Three credit hours*

H 6 History of the United States (since 1848). A continuation of course 5, dealing with the slavery controversy, the Civil War, reconstruction problems, material development, and contemporary history and problems. Required of Sophomores in Arts and Science, Home Economics, and the four-year course in Education.

PROFESSOR VAUGHN *Three credit hours*

H 13 The Renaissance and Reformation. The political background of the period is studied, but special emphasis is laid on social and economic conditions, the developments in art and literature, and the causes and results of the Protestant revolt. Elective for Juniors and Seniors. [Omitted in 1922-1923].

PROFESSOR BEVAN *Three credit hours*

H 14 The French Revolution and Napoleon. A special study of the Revolutionary era; the characteristics of the Régime, the philosophers and economists, the course of the Revolution, the rise of Napolean, and the wars of the Empire. Elective for Juniors and Seniors. [Omitted in 1922-1923].

PROFESSOR BEVAN *Three credit hours*

H 15 History of Greece. A general survey of Greek history to the Roman conquest with emphasis on the cultural epoch following the Persian Wars and with some attention given to Greek Art and Literature. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 16 Constitutional History of England. A survey of the historical development of English political and legal institutions. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 21 and 22 American Government. A general course dealing with the organization and activities of our American government—both national and state. Considerable stress is placed upon practical problems and present-day developments. Elective for Juniors and Seniors.

PROFESSOR VAUGHN *Six credit hours*

H 25 Principles of Economics. A one-semester introductory course which aims to give a general survey of Economics. Readings and reports. Required of Juniors in Education and Seniors in Home Economics. Elective for Juniors in other courses.

PROFESSOR BEVAN *Three credit hours*

H 26 Economic Problems. (Prerequisite: H 25). A continuation of course 25, dealing with selected topics and special problems of contemporary interest and importance. Required of Seniors in Home Economics. Elective for Juniors and Seniors in other courses

PROFESSOR BEVAN *Three credit hours*

H 27 and 28 Studies in Delaware History. An advanced course which offers opportunity to develop special topics in the social, economic, and political history of the State. The aim is partly information and partly training in research work. Elective for Juniors and Seniors.

PROFESSOR VAUGHN *Four or six credit hours*

H 29 and 30 Special Topics. The student may select her topic for investigation from any of the fields of work outlined above. Elective for Seniors.

PROFESSOR VAUGHN *Six credit hours*

H 31 and 32 Special Topics. History of Political Theories. A study of the representatives of political thought from Plato's Republic to modern times. Open to Seniors only.

PROFESSOR BEVAN *Six credit hours*

HOME ECONOMICS

PROFESSOR CLARK, MISS NULL, AND MISS KELLY

HE 1 Textiles and Laundering. A study of textiles, including cotton, linen, silk, and other fabrics, in order to enable students to exercise good judgment in purchasing and using these fabrics. Clothing costs and readjustments in terms of a budget. A study of the principles and processes involved in laundry work. Labor-saving appliances, space, equipment, and materials required for work in the home. Required of Freshmen in Home Economics. Two hours lecture and two hours laboratory. Laboratory fee, $2.50.

MISS KELLY *Three credit hours*

HE 2 Elementary Clothing. (Prerequisite: HE 1). Handwork and elementary sewing; study—practice and application of fundamental stitches to simple garments and household furnishings. The care and use of the sewing machine and its attachments. Darning, patching and simple embroidery. Students provide their own materials subject to the approval of the instructor. Required of Freshmen in Home Economics. One hour lecture and five hours laboratory. Laboratory fee, $2.50.

MISS KELLY *Three credit hours*

HE 4 Foods and Cookery. (Prerequisite: C 1). This course is designed to teach the fundamental principles underlying the selection and preparation of food. It includes a study of the composition and energy value of typical foods, their function in the diet and processes of cookery, and treats briefly of food production and manufacture. Required of Freshmen in Home Economcs. One hour lecture and five laboratory hours. Laboratory fee, $7.50

MISS NULL *Three credit hours*

HE 5 Foods and Cookery. (Prerequisite: HE 4). This course includes a study of food preservation, the essentials of an adequate diet, the planning of menus, the preparation and serving of meals, marketing and the cost of food for the family group. Required of Sophomores in Home Economics. One hour lecture and five laboratory hours. Laboratory fee, $7.75.

MISS NULL *Three credit hours*

HE 6 Drafting and Elementary Dress-Design. (Prerequisites: HE 1 and 2, or equivalent work). This course gives practice in making patterns by drafting and altering commercial patterns to fit the individual. From these, other patterns are designed and modeled in cambric. Design and fitting are emphasized. Middy blouse, simple wash dress, and a simple afternoon dress. Students provide their own materials subject to the approval of the instructor. Required of Sophomores in Home Economics. One hour lecture and five hours laboratory. Laboratory fee, $3.00.

MISS KELLY *Three credit hours*

HE 9 Nutrition. (Prerequisites: HE 4 and 5, C 7 and 8, and Ph 1 and 2). This course includes a study of the chemical elements and compounds involved in the nutrition of the human body, digestion and metabolism, and the energy, value, and cost of food. Dietaries adequate in energy and protein for various types of individuals are planned and prepared. Two lecture and two laboratory hours. Laboratory fee, $7.50.

MISS NULL *Three credit hours*

HE 10 Nutrition. (Prerequisites: HE 4, 5, and 9, C 7 and 8, and Ph 1 and 2). Minerals and vitamines are studied as essentials of an adequate diet. Dietaries meeting the needs of families and individuals of various types and ages are planned and prepared. The course also considers the factors influencing the cost of food, principles of wise expenditure, food fads, and sanitation and diet in disease. Two lecture and two laboratory hours. Laboratory fee, $7.50.

MISS NULL *Three credit hours*

HE 11 Child Care and Home Nursing. (Prerequisites: Ph 1 and 2). This course considers the physical care of infants and children in relation to proper food, clothing, bathing, sleep and air; prevention and control of sickness through proper hygiene and sanitation; care of the sick; and first aid treatment for common household emergencies. Observation in hospitals and institutions. Two lecture and two laboratory hours. Laboratory fee, $3.75.

MISS NULL *Three credit hours*

HE 13 or 14 Household Management. (Prerequisites: HE

1, 2, 4, and 5). The application of scientific and economic principles to the problems of the home. The course includes marketing, planning and preparation of meals, budget-making, daily and weekly care and repair of the home. Experience in various phases of home management is given in the Practice House, where groups of students live and work under supervision. Required of Juniors and Seniors in Home Economics. One hour lecture and fifteen hours laboratory.

PROFESSOR CLARK *Six credit hours*

HE 16 Foods and Cookery. (Prerequisites: HE 4 and 5). An advanced course which aims to give the student a wider knowledge of available food materials; of the great variety of seasonings and flavors; and practice in some of the more complicated processes of cookery. Elective for all students who have the required preparation. One hour lecture and two hours laboratory. Laboratory fee, $7.50.

One and one-half credit hours

HE 17 Dressmaking. (Prerequisites: HE 1, 2, and 6). This course includes the cutting and making of a tailored silk shirt and a wool dress. Use of commercial patterns; technique of design, workmanship, and finish. Students provide their own materials subject to the approval of the instructor. Elective for all students with prerequisites. One hour lecture and two hours laboratory. Laboratory fee, $1.50.

MISS KELLY *One and one-half credit hours*

HE 18 Applied Dress-Design. (Prerequisites: HE 1, 2, 6 and 19). Study of the figure; its proportion, lines, and various views. Development of economy and good taste in line, color, and textiles; designs for dresses for different functions and seasons adapted from fashion magazines. Conservation of materials. Combinations of colors in wools and various materials to show their qualities and their possibilities Practice through the use of various media such as muslin, cheesecloth, and crinoline. Study of dress accessories. Students provide their own materials subject to the approval of the instructor. Elective for Seniors in Home Economics. One hour lecture and five hours laboratory. Laboratory fee, $5.00.

MISS KELLY *Three credit hours*

HE 19 Methods of Teaching Vocational Home Economics. A study of the selection of subject matter, methods of presentation, class management, equipment and illustrative material adapted to the teaching of the different phases of home making. The planning of a course of study for vocational classes. Required of Seniors in Home Economics.

PROFESSOR CLARK *Three credit hours*

HE 20 Practice Teaching. This course consists of the teaching of Home Economics subjects to classes in secondary schools. It includes the preparation of lesson plans, the collection of illustrative material, and the keeping of records and reports. Required of Seniors in Home Economics.

PROFESSOR CLARK *Three credit hours*

MATHEMATICS

PROFESSOR HARTER AND ASSISTANT PROFESSOR REES

Three hours a week in Algebra and Trigonometry are required of all students in the Freshman year in the course in Arts and Science and in the course in Education. Elective courses are provided for students who may desire to continue Mathematical work beyond the Freshman year.

M 3 College Algebra, including a rapid review of the Elements, Quadratics, Arithmetical and Geometrical Progressions, Permutations and Combinations; Complex Numbers; Theory of Equations; Logarithms. Required of Freshmen in Arts and Science, and in Education.

Three credit hours

M 4 Trigonometry, Plane and Spherical. Required of Freshmen in Arts and Science, and in Education.

Three credit hours

M 5 Analytic Geometry; Conic Sections and Higher Plane Curves in Cartesian and Polar Co-ordinates; Solid Analytic Geometry. An elective course open to all who have the requisite preparation.

Three credit hours

M 6 An introductory course to the Calculus. Open to election to such as have completed M 5.

Three credit hours

M 7 and 8 (Prerequisites: M 5 and M 6). Differential and Integral Calculus, and Differential Equations.

Six credit hours

M 9 The History of Mathematics. Elective.

One credit hour

M 13 Geometry of Space. A course for students in Arts and Science, and in Education who do not offer Solid Geometry upon entrance and who wish to pursue mathematics studies in advance of M 2. No college credit will be given for work done in this course.

MODERN LANGUAGES AND LITERATURES

Professor E. L. Smith, Assistant Professor Saleski, Assistant Professor Brinton, Assistant Professor Kirkbride, and Miss Ospina

French and German are among the required subjects of study, and Spanish and Italian are offered to those who wish to elect them. With the approval of the Academic Council any year or years of this work may be elected by a student in addition to the amount required in her course.

The aim of the courses offered in Modern Languages is to provide elementary and intermediate instruction in German, French, Spanish, and Italian. Students who have completed commendably the courses offered in these languages may expect to possess a good pronunciation, an accurate reading knowledge of the language, and an acquaintance with the more important authors and some familiarity with the more important literary groups and movements. The scientific and commercial aspects of the languages receive due attention but without overlooking the more important cultural values. An effort is made to acquaint the student with the several European civilizations from the linguistic and literary point of view, and to inspire in her such a love for these languages and literatures as will be a source of pleasure and intellectual growth.

FRENCH

ML 1 and 2 Beginning French. For Freshmen who may elect French to satisfy their required work in Modern Languages. This course is a required course for students whose entrance preparation in French has been found to be deficient (see

page 162). Upon satisfactory completion of this course, students are prepared to enter ML 3 and 4.

Six credit hours

ML 3 and 4 Intermediate French. This course is designed to meet the demands of Freshmen who have satisfactorily passed the departmental entrance test in French. A rapid but thorough review of French grammar. French composition is continued throughout the course by means of themes, reports, letter-writing, etc. Aural and phonetic training. One period a week is devoted to the rapid reading of French texts, newspapers, etc., which are used as a basis for vocabulary building.

Six credit hours

ML 5 and 6 Advanced French. Continuation of the work of ML 3 and 4. Formal Composition. Outline of the history of French literature with illustrative reading. Aural training and definite emancipation from the dictionary are two primary aims of this course. Prerequisite: ML 3 and 4, or their equivalent.

Six credit hours

ML 7 Continuation of ML 5 and 6. First semester of Junior year. Elective for students who have completed ML 5 and 6 or equivalents. The aim is a wider reading knowledge and further vocabulary building. Texts are chosen to form an introduction to the work in literature courses.

Three credit hours

ML 8 Literature. Second half of the Junior year. Elective for students who have completed ML 7. French literature from 1600 to Chateaubriand. French classic drama—Corneille, Racine and Moliere. Voltaire, Diderot, and Rousseau. Readings in literary history and criticism.

Three credit hours

ML 8T Teaching of French in Secondary Schools. Second semester of Junior or Senior years. For students who have completed ML 7 and who desire to prepare for the teaching of the language methods, materials and texts, etc. Students taking this course may also elect ML 8 or ML 10 at the same time.

(Course to be given when elected by sufficient number of students.)

Three credit hours

ML 9 and 10 Nineteenth Century Literature. From the Romantics to the reaction against Naturalism. Drama, poetry, and the novel. The latter part of the course will treat contemporary writers and tendencies.

Six credit hours

SPANISH

ML 21 and 22 Elementary Spanish. Stress is laid on accurate pronunciation, mastery of the elements of grammar, and the acquisition of vocabulary. Oral and written exercises. Reading of easy modern Spanish prose. Composition and conversation. Hills and Ford, Spanish Grammar. DeVitis, Spanish Reader. Crawford, Spanish Composition. Gil Blas.

Six credit hours

ML 23 and 24 Advanced Spanish. Attention will be given to both practical and literary ends. Conversation and composition in Spanish throughout the year. Humphrey's Spanish Prose Composition. During the first half of the year representative plays and novels from the nineteenth century will be read and studied. During the second half either Cervantes' Don Quixote or the dramas of Lope de Vega and Calderon will be studied. Lectures, readings, and reports.

Six credit hours

ITALIAN

ML 41 and 42 Elementary Italian. Study of Italian grammar with oral exercises in elementary composition. Grandgent, Italian Grammar. Easy reading in modern Italian.

Six credit hours

ML 43 and 44 Advanced Italian. Reading of more difficult Italian prose. Dante, La Divina Commedia.

Six credit hours

ML 61 and 62 First Reading Course. The aim of this course is to provide the student with an elementary reading knowledge of the language. Accordingly grammar and pronunciation are taught only so far as they are necessary for this purpose. Hoertel & Cast, Elements of German Grammar; Heyse, L'Arrabbiata; Bernhardt, Deutsche Literaturgeschichte; Lessing, Minna von Barnhelm. No credit will be given for less than the full course.

Six credit hours

ML 63 and 64 Second Reading Course. The purpose of this course is to help the student attain ease and accuracy in the reading of more difficult German. Etymology and the formation of words are discussed in so far as these contribute to this purpose. Freytag, Die Journalisten; Scheffel, Der Trompeter von Säkkingen; Eichendorff, Aus dem Leben eines Taugenichts; Schiller, Maria Stuart. No credit will be given for less than the full course.

Six credit hours

ML 65 Language Course. (This course is prerequisite to all courses between 71 and 81 inclusive.) Grammar, composition, conversation.

Three credit hours

ML 67 and 68 Reading in Special Subjects. (Prerequisite: ML 64). The purpose of this course is to assist students specializing in other fields to avail themselves of the material published in German in these particular fields. Accordingly, history, chemistry, literature, or whatever other subjects constitute the field of special study of the individual students, will be taken up.

Six credit hours

ML 69 and 70 Individual Assistance in Special Fields. The purpose of this course is to assist students in their individual investigations in other subjects in so far as their material may be in German. Credit will be determined in the case of each student separately according to the amount and nature of his work.

ML 71 and 73 Goethe. (Prerequisite: ML 65). Conducted mainly in German. [In 1922-1923 ML 73 will be omitted.]

ML 72 Lessing. (Prerequisite: ML 65). [Omitted in 1922-1923 and 1924-1925.]

ML 74 Schiller.. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925.]

ML 76 The German Drama since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1923-1924.]

ML 78 German Prose since Goethe. (Prerequisite: ML ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1924-1925.]

ML 80 German Lyric Poetry since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1923-1924.]

ML 81 Middle High German. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1922-1923 and 1924-1925.]

ML 82 Advanced Scientific German. (Prerequisite: ML 65). [Omitted in 1922-1923 and 1924-1925.]

MUSIC

Miss Wilcox

MU 1 and 2 Public School Music. Course A

Sight Reading.

This is an elementary course in theory and sight reading. In order to complete this course, the student must be able to sing at sight individually, using the Latin syllables, music suitable for the first four years in the public schools.

Dictation. (Study of tone and rhythm.)

The subject matter of music is presented to the sense of hearing. The student gains the power to think tones and sense rhythms, and learns to recognize and write simple melodic phrases in all keys.

Material and Methods

This course is devoted to the study and demonstration of material and methods for the first four years of music in the schools. Special attention is given to the selection, presentation, and interpretation of rote songs for the primary grades.

MU 3 Public School Music. Course B

Sight Reading

This course requires singing at sight individually, with and without syllables, music suitable for the seven years in the public schools.

Dictation

This course deals with the problems of tone and rhythm included in the seven years in the public schools.

Material and Methods.

The teaching of music in the upper grades is taken up in detail, from the fifth to the eighth, inclusive. The child voice as found in the upper grades is fully discussed in this class.

Mu 4 Practice Teaching

This course is open to students who have completed Mu 3. Each student will be given opportunity for practice teaching under supervision of the instructor.

Mu 5 and 6 Appreciation of Music

This course will include the history of music and current events, and the studying of the lives of the greatest composers in their relation to the development of the world's music. The instruments of the modern symphony orchestra will be studied separately and in various combinations, and a survey will be made of the historical development of the opera and oratorio.

Six credit hours

GLEE CLUB

The Glee Club is open to all students who can qualify. One hour-period a week is devoted to chorus singing and to instruction in the technical and interpretive elements of choral music.

PRIVATE LESSONS

In addition to a regular course taken by the student, individual instruction in piano and voice is given for which a fixed charge is made.

PHILOSOPHY*

Phil 5 Ethics. An introductory study of problems, such as highest good, virtue, conscience, origins of morality, etc., followed by a survey of systems of ethics. A collateral study in class of Palmer's Nature of Goodness.

DR. FLACCUS *Three credit hours*

Phil 4 History of Philosophy. History of ancient philosophy with special emphasis upon Plato and Aristotle; modern philosophy from the Italian Renaissance to the present time.

DR. SMITH *Three credit hours*

PHYSICAL EDUCATION

MISS PARKHURST

The purposes of this department are (1) to develop in each student a responsibility for her health, and (2) to provide regulated exercise, posture training, and recreation.

Each student, upon entering college, is given a physical examination by a physician and the director of physical education, in order that individual corrective work may be substituted for the class exercises where necessary.

P 1 and 2 Required of Freshmen, three periods a week through the year. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter.

P 3 and 4 Required of Sophomores, three periods a week through the year. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter.

P 5 and 6 Special work, corrective exercises. Required of those who need this training. Periods to be determined by the director of physical education.

P 7 and 8 Dancing. Folk and national dances, dance rhythms, and the fundamentals of classic dancing. Elective for Juniors and Seniors, one period a week from November 1, through the year.

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*The work in Philosophy was conducted in 1921-1922 by Dr. Flaccus and Dr. Smith of the University of Pennsylvania.

P 9 and 10 Required of two-year students in Education, three periods a week. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter. Also gymnastics, games, and rhythmic work for the school room and playground.

P 11 and 12 Required of two-year students in Education, three periods a week. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter. Also training in the teaching of gymnastics, games, and folk dancing, for the school room and playground. An opportunity is given for practice teaching under the supervision of the instructor.

PHYSICS

Assistant Professor Rees

General Physics is required in the Sophomore year of all students in Home Economics and is open for election to all others. The advanced and applied courses are given in alternate years and may be elected by students who have taken Ps 1 and 2, or by those who can satisfy the instructor of their fitness to profit by it. Ps 3 and 4 wil be omitted in 1922-23.

Ps 1 and 2 General Physics. From this course the student should get a comprehensive and connected view of the entire field as well as a working knowledge of its laws in their industrial and household applications. Sophomore year. One lecture, two recitation periods, and three laboratory hours. Laboratory fee, $1.50 a semester.

Six credit hours

Ps 3 and 4 Advanced Physics. (Prerequisites: Ps 1 and 2). A more complete and detailed study of the important facts and principles of Physics. Individual investigation and experimentation aim to develop the student's power of a systematic inquiry into and a careful examination of her practical problems. The teaching of Physics will be considered in the second semester. Two lectures, one quiz, and three laboratory hours. Laboratory fee, $2.00 a semester.

Six credit hours

Ps 6 Household Applications of Physics. (Prerequisites: Ps 1 and 2). Instruments and mechanisms commonly used in the household will be studied in the light of Physics; will be assembled, adjusted, and repaired in the laboratory and their relative advantages investigated. New devices, whose merits warrant their introduction to the modern home, will be considered. One lecture and five laboratory hours. Laboratory fee, $2.00.

Three credit hours

PHYSIOLOGY AND HYGIENE

Miss Calef and Miss Parkhurst

PH 1 and 2 Physiology and Hygiene. The object of this course is to give an understanding and appreciation of the general physiological processes of the human body, a knowledge of what constitutes health, and the reasons for the laws of hygiene. Some work in anatomy is included. Two lectures, one recitation, two laboratory periods a week through the year. Fee, $1.25 a term.

Six credit hours

PH 4 Hygiene and Sanitation. Personal and educational hygiene, the problems of school and community sanitation which concern the teacher, and the teaching of health principles through the grades. Required of two-year students in Education. Three periods a week.

Three credit hours

SOCIOLOGY

Professor Wilkinson

Soc 1 Introduction to the Study of Society. A survey of social origins, forces, laws, and aims, with a view to laying the foundation for the scientific study of practical social problems.

Three credit hours

Soc 2 Practical Sociology. A course dealing primarily with certain pathological conditions, their causes, significance to society, and possible means of improvement. Following are some of the problems considered: poverty, crime, public health, dependents and defectives, child labor.

Three credit hours

GENERAL INFORMATION

REGISTRATION

A reception committee appointed by the President of the Y. W. C. A. will receive students at Residence Hall as they arrive and will act as escorts while they complete their registration.

Registration proceeds as follows:

1 Students receive registration cards from the Secretary to the Dean.

2 The faculty adviser of each school, Arts and Science, Home Economics, or Education, explains the work of that school and assists the student in making out her program for the term.

3 Board and other charges should be paid at the Business Office.

4 Application for a key to the room assigned to the student should be made to the Director of Halls. The required deposit of fifty cents will be refunded upon the return of the key.

5 The registration card should be presented to each instructor for his signature at the first meeting of the class which the student enters.

6 To complete registration this card properly signed should be returned to the office of the Dean not later than Saturday of the first week of the term. Failure to complete registration on the day specified will make the student liable to a fine of one dollar per day until registration is completed.

7 Students should refer to the bulletin boards for special announcements.

FEES AND CHARGES

MATRICULATION

A matriculation fee of five dollars is required of all new students when they apply for admission. No application is recorded until this fee has been paid. Rooms in the dormitories are assigned to Freshmen in the order in which applications are recorded.

DIPLOMA

A diploma fee of ten dollars is charged each student before her graduation.

TUITION

Tuition is free to all students from the State of Delaware. The tuition for all other students is fifty dollars a term, or one hundred dollars for the year.

NON-RESIDENT STUDENTS

A fee of twenty-five dollars is charged, annually, to all students who do not reside in the dormitory.

SPECIAL STUDENTS

Special students will be charged the regular laboratory fees for each course they enter. In addition they will pay five dollars for the first course and three dollars for each additional course.

INFIRMARY

An infirmary fee of five dollars is charged to every student at the beginning of each term, all or any portion of which not being used is refunded at the close of the college year. The charge for the infirmary, including meals and care, unless the case demands a special nurse, is one dollar per day.

BOARD AND ROOM

The charge for board and room is three hundred and fifteen dollars per year, one hundred and sixty dollars of which is to be paid on or before the day of registration, and one hundred and fifty-five of which is to

be paid on or before the registration day of the second term.

Seniors, Juniors, and Sophomores are required to make a deposit of ten dollars before August first to secure the reservation of a room in the dormitory; the amount to be deducted from the sum paid for board at the time of registration in the fall. This fee will be returned in case a student is unable to enter college providing that notification is sent to the office of the Dean before September first of the year of entrance.

BREAKAGE

Each student of chemistry or bacteriology is required to purchase a breakage card at a cost of three dollars; this card to be returned to the Business Office for the refund of any portion of this amount which may not have been used.

Student Self-Aid

Students are permitted to do such work as it is practicable to assign to them in the care of the buildings and in connection with the dining-room service, and are paid for this work at a fixed rate.

Scholarships

The Delaware Association of College Women offers a scholarship of $100 each year to the young woman who passes the entrance examination given by the Academic Council of the Women's College of Delaware with the highest standing. She must be a resident of the State and physically as well as mentally fit for college life.

The State Board of Education offers scholarships of $150 per year to students taking the two-year course in education. The acceptance of such a scholarship obligates the student to teach one year in the elementary schools of Delaware for each year for which the scholarship is received.

Student's Loan Fund

The object of The Student's Loan Fund, which was established in 1915, is to help deserving students to obtain a college education. The fund is being raised by the Delaware State Federation of Women's Clubs and by individuals interested in the college. Students who borrow from this fund pay no interest while they are in college, but after leaving will be required to pay interest.

Scholarship Requirements

I Schedules of all students must be approved by the faculty adviser. Changes in schedules after the first week may be made only with the approval of the Academic Council.

II All applications for permission to change from one course to another must be signed by the applicant's parents or guardian and presented to the Scholarship Committee to be approved by the Academic Council before they become effective.

III No student may drop a course without first obtaining permission from her faculty adviser, to be reported to Academic Council at the next meeting.

IV No student may enter in the first term later than October 15, unless she has completed an amount of work equivalent to the work of the classes she proposes to enter.

V No regular student may carry less than 12 credit hours of work; no regular student may take more than the prescribed number of hours of work un-

less she has made a grade of "B" or better in at least four-fifths of the work which she undertook during the preceding term and has no conditions.

VI In order to be rated as a member of any class above the Freshman class, a student must have completed at least four-fifths of the work of the preceding year and have no conditions before that year.

VII A student, to remain in college, must pass at least 60 per cent of her total number of credit hours of term work, exclusive of Physical Training. In estimating this minimum requirement, one-half hour or less shall be disregarded; more than one-half hour shall be counted as one hour.

VIII On failure in a subject, a student may take one re-examination only. If a student does not remove a condition in any subject before that subject is again given in class, her grade will be considered E, and the subject must be repeated.

IX A student will be allowed to tutor in one subject only. Tutors are to be recommended by the head of the department.

X The system of grades is as follows:

A—90 or above
B—80 or above
C—70 or above
D—60 or above, and indicates failure redeemable by examination
E—Complete failure, the subject to be repeated in class

Attendance

Each student may be absent without explanation not more than twice from each three-credit-hour course each term. No such absences are to occur directly before or after a holiday or a vacation. Excuses

must be presented within three days after the return of the student to classes. A list of unexcused absences shall be posted every second Monday during the college year. The names of students who have been absent from any one class more than twice in the same term without being excused shall be reported at once to the Academic Council.

WOMEN'S COLLEGE LIBRARY

The Women's College Library is located on the second floor of Science Hall. The library of the late Dr. George W. Twitmyer, which was bequeathed to the Women's College upon his death in 1914, forms the nucleus of this reference collection which now numbers over 5,000 volumes, and is constantly receiving additions by purchase and gifts. It is especially valuable for its works on education and psychology. Over 75 current periodicals, including the leading literary and scientific magazines, and a number of newspapers, are on file in the reading-room. This collection is supplemented by the Browsing Room Library, and by loans from Delaware College Library and Wilmington Institute Free Library. The Browsing Room Library, in Residence Hall, is an unusually well chosen collection of books of fiction, art, biography, history, essays, and travel, the gift of two friends of the college.

PUBLICATIONS

The Blue Kettle, the first number of which was issued in December, 1921, is a quarterly periodical to which students contribute articles along the lines of their special interest.

The Blue and Gold published by the Junior Class gives the year's history of the activities of class and other organizations.

The Student Self-Government Association, composed of all the members of the student body, has general charge of the maintenance of quiet and order in the halls. Under its supervision come practically all matters relating to the conduct of the student body. The student association aims not only to effect desirable results in student life, but at the same time to furnish valuable training in business management and the art of leadership.

The Students Christian Association is affiliated with the National Y. W. C. A. from which it receives much assistance in planning its work. The Association takes the responsibility of welcoming new students and assisting them with registration. Throughout the year it takes charge of the Sunday evening service and the mid-week religious conference. A large group of delegates is sent annually to the Summer Conference at Eaglesmere, Penna., where about seventy colleges located in the East-Central States are represented.

The Dramatic Society affords opportunity for the study of dramatic art and the allied arts of scene production and costume design. It admits all students to its membership.

The Athletic Association was organized to promote interest in sports. The various inter-class games, the award of honors for success in the different field day events, and all other athletic activities outside of those conducted by the Department of Physical Education are under its control.

The Glee Club is under the direction of the instructor of music and gives opportunity for the study of choral music by those who are interested in it and can qualify for admission. The club gives one concert each year.

The Alumnae Association of the Women's College was organized in 1918 immediately following the graduation of the first class. Students who do not

complete the college course are admitted as associate members upon the graduation of the class with which they entered. The annual reunion is held at the college in February.

UNIVERSITY
GRADUATE AND RESEARCH WORK

The University offers facilities for advanced study and research in certain departments. Such study or research may be undertaken either in candidacy for the Master's degree or as an independent project. The Experiment Station, with its corps of investigators devoting their entire time to scientific research, affords especial advantages for and stimulus to research in problems in the fields of chemistry, biology, and related subjects. All graduate work for advanced degrees as well as all research work by members of the faculty and others is under the supervision of the Committee on Graduate Studies and Research, and applications for financial or other assistance from the Board of Trustees and all other matters relating to graduate study and research must be referred to that Committee.

MASTER'S DEGREE

The Master's degree is awarded to graduate students who have shown marked proficiency in advanced liberal studies or ability to do original work. Each candidate must complete successfully a course of graduate study in accordance with the following regulations:

Committee in Charge of Graduate Work

The work of all candidates for the Master's degree is under the general supervision of the Committee on Graduate Studies and Research and the immediate direction of the department in which the major is taken, the instructor in charge serving as a member of the Committee for the consideration of all matters pertaining to the candidate's work.

Admission

Formal application, including a statement of the proposed program of study as approved by the instructor in charge of the major subject, must be submitted to the Committee on Graduate Studies and Research for approval. Students are advised to mature their plans and make application before the opening of the college year. As a rule applications submittted later than October 1 cannot be approved.

Program of Study

Graduates of the University of Delaware or of any other college of approved standing may, on the satisfactory completion of an approved program of study, receive the degree of Master of Arts or Master of Science. The minimum amount of work accepted for either degree is one full year (the equivalent of thirty semester hours) of resident graduate study.

The program of study may include work in one or more departments or fields of study, provided not less than one-half is devoted to a major subject and the whole shows a consistent plan pursued with a definite purpose. The major must include a piece of research or constructive work representing the equivalent of not less than five semester hours of credit. The report on this work is to be presented in the form of a thesis, approved by the department in which the major is taken, and must be filed with the Registrar at least two weeks before Commencement Day.

Transfer of Undergraduate Credit

Advanced undergraduate courses may in cases approved by the Committee on Graduate Studies and Research be taken to apply toward the requirements of the minor subjects, not to exceed six credit hours, but extra credit earned during the undergraduate course may not be transferred for graduate credit ex-

cept as follows: If at the beginning of the first or second semester of his senior year a student has so far completed his work for the Bachelor's degree that his program is not full, he may elect one or more courses which may count toward the Master's degree, subject to the approval of the Committee.

Character of Master's Degree

The Master's degree conferred depends upon the character of the Bachelor's degree preceding it. The M. A. follows the B. A., the M. S. follows the B. S. This practice may, in the discretion of the Committee, be departed from in cases where the undergraduate degree was obtained in an institution which gives the B. A. degree only in the College of Arts and Science.

A graduate of any of the courses in Engineering who has been engaged in acceptable professional work for a period of not less than three years after receiving the degree of Bachelor of Science, or two years after receiving the degree of Master of Science, may be awarded the professional degree of C. E., M. E., E. E., or Ch. E., according to the undergraduate course pursued. A candidate for one of these degrees must declare his candidacy and file with the Committee on Graduate Studies and Research a detailed statement covering his professional study and experience not later than October 1 preceding the commencement at which he proposes to qualify. Prior to May 1 next succeeding, he must submit an acceptable thesis upon some theme previously approved by the Faculty of the School of Engineering. The candidate, if successful, will be notified and must present himself at commencement to receive the degree.

Candidates for the Master's Degree will be charged with the following fees in addition to laboratory fees:

1 Registration Fee, $5.00 (unless already paid as an undergraduate in the University of Delaware).

2 Incidental Fee, $20.00; half payable at time of registration; half at the beginning of the second term of study.

3 Diploma Fee, $10.00.

SUMMER SCHOOL FOR TEACHERS

OFFICERS OF ADMINISTRATION

WALTER HULLIHEN, PH. D.....*President of the University*
WILLIAM A. WILKINSON, A. M. ....*Director of Summer School*

Purpose

The six weeks' summer school, held each year at the University under the direction of the Department of Education, is essentially a teachers' training school. The work offered includes courses in the common school branches, methods of teaching and other professional subjects, and a limited number of advanced courses. The primary purpose is to give teachers in service an opportunity to utilize a portion of the summer vacation in making further academic and professional preparation for their work. Special attention is given to the needs of rural and elementary teachers.

Admission

There are no examinations or other regular requirements for admission to the Summer School. All persons who hold a teacher's certificate or are planning to take the State Board examinations at the close of the session are eligible to attend. All other persons must satisfy the Director of the Summer School that they are able to pursue with profit the courses in which they wish to enroll.

College Credit

The program of studies of the Summer School is made up of three types of courses: (1) very elementary subject-matter and professional courses designed for students who have had less than four years' high

school preparation; (2) courses regularly given in the two-year curriculum of the Women's College for the preparation of elementary teachers; (3) a limited number of courses leading to a college degree.

For courses in group (1) no college credit is allowed. The satisfactory completion of courses in group (2) may be counted toward the Elementary Teacher's Diploma. The maximum amount of credit that a student may earn in one summer session is nine credit hours toward the Elementary Teacher's Diploma and eight credit hours toward a college degree. The giving of credit in all cases is conditioned upon the student's being able to satisfy in full the regular requirements for admission to the University.

Session for 1922

The session for 1922 will be held from June 26 to August 4, inclusive. A special Summer School Bulletin is issued in April of each year. Copies of the Bulletin and any further information desired may be had from the Director of the Summer School.

AGRICULTURAL EXTENSION

The Division of Agricultural Extension was established by an act of the Legislature in 1911. The work is largely supported by a Federal appropriation, known as the Smith-Lever fund, and is supplemented by State Appropriations.

The function of the Extension Division is to carry Agricultural information out into the rural districts of the State and to demonstrate how such information may be put into advantageous practice. The aims of the Division are better farming; better farm houses; better farm life; better business methods on the farm; more economic distribution of farm products; and the inculcation of, in the boys and girls of the farm homes, a deep-rooted love and enthusiasm for farm life.

The Division is organized upon extension work for men, women, and boys and girls. Each county has a county agricultural agent, and a county club agent, while the women's work is looked after by a Home Demonstration Agent at large for the entire State. These various agencies cooperate with the people of the county by conducting demonstrations in better farming and better home making, and are assisted in every way possible by the several departments at the College and in some cases by specialists along certain lines of Agriculture.

As a co-operating agency the farmers themselves have organized County Farm Bureaus, which look largely to the county agents for inspiration and guidance.

All Agricultural Extension work is carried on upon the project basis, and is based upon the fundamental economic needs of the various farm industries or farm communities.

THE EXPERIMENT STATION

The Delaware College Agricultural Experiment Station was made possible by an act of Congress passed in 1887, known as the Hatch Act. Under the provisions of this act each state received an annual appropriation of $15,000 for the establishment of an Agricultural Experiment Station. This amount was supplemented in 1906 by an act known as the Adams Act, which carries an annual appropriation of $15,000 for the use of the Agricultural Experiment Station.

The function of the Experiment Station is to carry on research work along the lines of plant and animal production and products. The object of such research work is to add to the sum of human knowledge relative to plant and animal uses, and to better agricultural practices.

The Experiment Station has a separate research library, research laboratories, and staff. It is carrying on investigations in field crops, soils, plant diseases, animal diseases, animal production, fruit culture, vegetable culture, soil bacteriology, plant breeding, agricultural chemistry, and the physiological reactions of plants.

The results of the investigational work of the Station are published from time to time in bulletins which are distributed free to all farmers in the State who may wish them. The work of the Station has had a profound influence upon Delaware Agriculture.

The laboratories and offices of the Experiment Station are located in Wolf Hall. A considerable portion of the college farm is given over entirely to experimental work in Agriculture.

DIVISION OF ACADEMIC EXTENSION

The Division of Academic Extension was created two years ago for the benefit of people who live outside of Newark and who are unable to attend the regular courses given at the University. The work offered consists of afternoon and evening classes and lectures in subjects of college grade, conducted anywhere in the state where there is sufficient demand. Full college credit is given, on the basis of one credit for every fifteen hours of actual time expended in classes or lectures. These credits are accepted as applicable toward a bachelor's degree.

During 1921-1922, four courses were maintained as follows:

1 Course in English Composition, Professor G. E. Dutton—Auspices Elkton (Md.) Schools.

2 Course in Economics, Dr. E. V. Vaughn—Auspices Greenwood Schools.

3 Course in Politics and Government, Dr. E. V. Vaughn—Auspices Greenwood Schools.

4 Course in French, R. W. Kirkbride—Auspices Extension Department, Newark.

It is the aim of the Division of Academic Extension to meet the needs of any town in the State. At present, no fund is available which can be applied to this work; consequently each course must be financially self-supporting. Courses may be arranged on a schedule of weekly, semi-weekly, or bi-weekly meetings, as desired, and each meeting may be of one or two hours' duration.

DIVISION OF REHABILITATION

The Division of Rehabilitation was established by the University of Delaware as a result of a request from the Veterans' Bureau for assistance in training disabled soldiers and sailors. Many former soldiers and sailors of the World War were incapacitated by gunshot wounds, shell shock, gas, amputations, and functional disorders. In many cases these disabilities were such as would prevent the men from following a trade or occupation. The United States Government is endeavoring to prepare these men for occupations in which their disability will be overcome by training, that they may "carry on" in life on an equality with their more fortunate comrades.

In April, 1920, the University was asked to assist in the work of rehabilitation by throwing open its doors to ex-service men for training in agriculture. A plan was arranged by which agricultural training could be given Rebabilitation students without adding financial burden to the University. This plan was approved by the University trustees and the Rehabilitation Division of the School of Agriculture was opened May 3, 1920. Owing to the fact that the University offers no two-year course in Agriculture, and that a large proportion of the men received for training had had but limited educational advantages, it was deemed best to establish separate courses with a special corps of instructors.

Purpose of Rehabilitation Division

Each student is offered an opportunity to pursue a course in Vocational Agriculture. The Rehabilitation course is similar to the two-year course being offered by other agricultural colleges, but it has been made

very flexible to allow enrollment of new students at any time. To aid this, ahe same courses, usually outlined according to seasonal sequence are offered every year. The course of training given, prepares men to start farming for themselves or for others and also opens a wide field in occupations closely allied to agriculture.

Facilities

The Rehabilitation Division uses the buildings, farm, and classrooms of the University, the schedule of the work being so arranged that the regular University routine is not disturbed. In so far as possible the laboratory and farm equipment of the University is placed at the disposal of the Rehabilitation students. A new building has been erected which includes a dining-hall, a club room, three classrooms, and two offices for the exclusive use of the Rehabilitation Division in addition to the facilities loaned by the University.

Terms of Study and Credits

There are three terms in the Rehabilitation school-year: October to February, February to June, and June to October. Minimum credits in addition to Farm Labor and Physical Training, are 14 for each of the first two terms, and 12 for the Summer Term.

Requirements for Admission

The only men admitted are those who are proven eligible for training by the Veterans' Bureau and are sent by them to the University of Delaware.

Major Agricultural Objectives

General requirements.

1 Several prearranged trips to surrounding districts.

2 Projects.

3 Farm practices and other requirements of Farm Practice Department.

4 Completion of all the requirements of the Academic Department.

5 Activities outlined in the Department of Physical Education.

6 Seventy agricultural credits in the major department elected.

Students majoring in any one of the main agricultural majors, General Agriculture, Horticulture, Animal Husbandry, and Poultry, are given required courses totalling 70 agricultural credits, and may choose additional electives. All credits in courses of instruction are term-hour credits.

GEN. AGRIC.		HORT.		A. H.		POULTRY	
Course	Credit	Course	Credit	Course	Credit	Course	Credit
1 C	4	1 Hort.	3	1 AH	3	1 P	3
2 C	3	2 Hort.	3	2 AH	3	2 P	3
1 S	4	3 Hort.	3	3 AH	3	3 P	3
2 S	3	4 Hort.	4	4 AH	3	4a P	1
1 AE	3	5 Hort.	3	5 AH	3	4b P	1
2 AE	3	6 Hort.	3	6 AH	4	5 P	1
1 Ec.	3	7 Hort.	3	7 AH	3	6 P	3
2 Ec.	3	8 Hort.	3	8 AH	2	7 P	3
3 Ec.	3	9 Hort.	3	12 AH	3	8 P	3
F. Prac.	3	10, 11, or		1 P	3	9 P	3
1 AH	3	12	2	1 Hort.	3	10 P	1 or 2
2 AH	3	F. Prac.	3	1 C	4	11 P	1 or 2
3 AH	3	1 S	4	1 S	4	1 Hort.	3
1 Hort.	3	1 C	4	1 Ec.	3	1 AH	3
1 P	3	1 AH	3	F. Prac.	3	1 S	4
Proj. tr.	12	1 P	3	Proj. tr.	12	1 C	4
Elec.	5	1 Ec.	3	Elec.	12	1 Ec.	3
	—	Elec. &			—	Proj. tr.	12
Total	70	Proj.	20	Total	70	Elec.	12
			—				—
		Total	70			Total	70

SUBJECTS OF INSTRUCTION

AGRICULTURE

Farm Crops

Farm Crops 1 Field Crop Production. Varieties, culture, improvement of cereal and forage crops. Three hours discussion and two hours field study.

C. E. PHILLIPS *Four credit hours*

Farm Crops 2 Crop Diseases and Insects. (Prerequisite: Farm Crops 1). Field identification and practical control. One hour class discussion and four hours field work.

C. E. PHILLIPS *Three credit hours*

Farm Crops 3 Seminar. (Prerequisite: F C 1 and 2). Advanced study along chosen lines.

C. E. PHILLIPS *Credits to be arranged*

Soils

Soils 1 Elementary Soils. Elementary study of soil fertility. Three hours classroom discussion and two hours of field practice.

C. R. RUNK *Four credit hours*

Soils 2 Soil Fertility and Crop Production. (Prerequisite: Soils 1). Three hours of classroom discussion and two hours of field study.

C. R. RUNK *Four credit hours*

Soils 3 Seminar. (Prerequisite: Soils 1 and 2). Advanced study along chosen lines.

C. R. RUNK *Credits to be arranged*

Agricultural Engineering

Ag Eng 1 Farm Equipment.

A. Farm Equipment—One half term. Elementary principles of mechanics and study of farm machinery.

B. Farm Buildings—One half term. The planning and construction of farm buildings and their equipment.

Two hours of class discussion and two hours of field practice.

C. R. RUNK *Three credit hours*

Ag Eng 2 Drainage and Concrete Construction.

A. The principles of drainage and laying out of drainage systems. One half term.

B. Use of concrete materials, mixing and construction. One-half term.

Two hours of class discussion and two hours field practice work.

C. R. RUNK *Three credit hours*

Ag Eng 3 Farm Power. (Prerequisites: Ag Eng 1 and 2). Study of construction and uses of gasoline engines and tractors. Two hours class study and two hours of field practice.

C. R. RUNK *Three credit hours*

Ag Eng 4 Seminar. Study and trips.

C. R. RUNK *Credits to be arranged*

Farm Economics

Farm Ec 1 Elements of Agricultural Economics. Principles of economics and agricultural progress. 2000 word thesis. Three class hours.

R. M. UPTON *Three credit hours*

Farm Ec 2 Farm Accounts. A simple system of farm bookkeeping. One class hour and four laboratory hours.

C. E. PHILLIPS *Three credit hours*

Farm Ec 3 Farm Management. (Prerequisite: Farm Ec 2). Organization and management of the farm business. Two hours class discussion and assigned individual farm managements problems.

C. E. PHILLIPS *Three credit hours*

Farm Ec 4 Marketing of Farm Products. (Prerequisite:

F Ec 1). Marketing, crop geography, prices, distribution, and cost. Thesis. Three class hours.

R. M. UPTON *Three credit hours*

Farm Ec 5 Co-operation, Co-operative Marketing, and Credit. Modern co-operation and credit. Thesis. Three class hours.

R. M. UPTON *Three credit hours*

Farm Ec 6 Seminar. (Prerequisites: F Ec 1, 4 and 5, or 2 and 3). Special study along chosen lines.

R. M. UPTON *One or two credit hours*

Horticulture

Hort 1 Elementary Horticulture. Foundation course in general horticulture. One two-hour practicum and two lessons.

R. M. KOON *Three credit hours*

Hort 2 Plant Growth. (Prerequisite: Hort 1). Elements of Botany applied to Horticulture. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 3 Small Fruits.. (Prerequisite: Hort 1). Propagation, planting, and subsequent care of small fruit plantation. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 4 Vegetable Gardening. (Prerequisite: Hort 1). Hotbeds, cold frames, planting, culture, and other practices in seasonal sequence. One lesson and two two-hour practicums.

R. M. KOON *Four credit hours*

Hort 5 Commercial Vegetable Gardening. (Prerequisite: Hort. 1 and possibly H 4). Continuation of Hort. 4, dealing with care of vegetable gardens. One lesson and two two- hour practicums.

R. M. KOON *Three credit hours*

Hort 6 Pruning, Plant Propagation, and Spraying. (Prerequisite: Hort 1). A practical course in the stated subjects. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 7 Commercial Horticulture. (Prerequisite: Hort. 1, 4, and 5 desirable). Care of the fall garden and orchard harvesting. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 8 Orchard Care and Management. (Preceded or accompanied by Hort. 1). Summer cultural practices in orchard and fruit plantation. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 9 Horticultural Manufacture. (For advanced students). Principles and practices in preservation of horticultural products. One lesson and one three-hour practicum.

R. M. KOON *Three credit hours*

Hort 10, 11, 12 Seminar. Advanced study of special problems. One two-hour period.

R. M. KOON *Two credit hours*

Animal Husbandry

AH 1 Elementary Animal Husbandry. Common facts concerning types and breeds, care and management. Two lessons and one two-hour practice period.

A. E. TOMHAVE *Three credit hours*

AH 2 Feeds and Feeding. (Preceded or accompanied by AH 1). Nutrition, the origin, composition, preparation, and value of feed stuffs. Two lessons and one two-hour laboratory period.

A. E. TOMHAVE *Three credit hours*

AH 3 Types and Breeds of Livestock. (Preceded or accompanied by AH 1). Origin, history, development, and characteristics of swine, horses, sheep, and cattle. One class hour and two two-hour practice periods.

A. E. TOMHAVE *Three credit hours*

AH 4 Management of Feeding and Production. (Preceded or accompanied by AH 1). Fundamental principles of feeding farm animals. Two lessons and one two-hour farm practice period.

A. E. TOMHAVE *Three credit hours*

AH 5 Advanced Judging. (Preceded or accompanied by AH 1, preceded by AH 3). Characteristics of breeds of livestock. Judging. One lesson and two two-hour farm practice periods.

A. E. TOMHAVE *Three credit hours*

AH 6 Dairying. (Prerequisite: AH 1). Standardizing, testing, modifying, separation, and classification of milk. Two lessons, one three-hour practice period.

A. E. TOMHAVE *Four credits*

AH 7 Livestock Management. (Prerequisite: AH 1). Care and management of livestock excepting dairy cattle. Two lessons and one two-hour farm practice period.

A. E. TOMHAVE *Three credit hours*

AH 12 Milk Production. (Prerequisite: AH 1). Milk production, care, feeding, and management of dairy cattle.

A. E. TOMHAVE *Three credit hours*

AH 8, 9, 10 Seminar. Advanced study along special lines. One two-hour period for discussions and outside work under supervision.

A. E. TOMHAVE *One, two, or three credits*

Poultry Husbandry

Poultry 1 Elementary Poultry Keeping. Complete elementary survey, foundation course. Two lessons and one two-hour farm practice period.

Poultry 2 House Construction and Design. (Prerequisite: P 1). Planning, arranging, designing poultry houses, foundation plans and construction. Two lessons and one practice period on plant.

A. E. SCHAFFLE *Three credit hours*

Poultry 3 Poultry Judging. (Preceded or accompanied by Poultry 1). History, classification of breeds, judging fancy and utility points.

A. E. SCHAFFLE *Three credit hours*

Poultry 4a Incubation. (Preceded or accompanied by P 1).

Setting up of machinery and operation, testing eggs, keeping records. Three short periods a day.

A. E. SCHAFFLE *One credit hour*

Poultry 4b Brooding. (Preceded or accompanied by P 1). Managing a brooder of chicks, keeping records of temperatures, growth and food. Three short periods a day.

A. E. SCHAFFLE *One credit hour*

Poultry 5 Flock Management. (Preceded or accompanied by P 1). Egg production, fattening, record keeping. Three short periods a day.

A. E. SCHAFFLE *One credit hour*

Poultry 6 Marketing. (Preceded or accompanied by P 1). Preparation of poultry and eggs for market, storage, preservation. Two lessons and one two-hour practice period.

A. E. SCHAFFLE *Three credit hours*

Poultry 7 Poultry Diseases. (Preceded or accompanied by P 1). Prevention and cure of diseases of poultry. Three lessons.

A. E. SCHAFFLE *Three credit hours*

Poultry 8 Poultry Farm Management. (Preceded or accompanied by P 1 to 7). For students specializing in Poultry Husbandry. Two lessons and one two-hour practice period.

A. E. SCHAFFLE *Three credit hours*

Poultry 9 Seminar. (Preceded by Poultry 1 to 8 inclusive). Special problems in poultry husbandry. One lesson.

A. E. SCHAFFLE *One or two credit hours*

Poultry 10 Seminar. (Preceded by Poultry 1 to 9 inc.). Continuation of Poultry 9.

A. E. SCHAFFLE *One or two credit hours*

Poultry 11 Research. Original investigation in poultry husbandry and thesis.

A. E. SCHAFFLE *Three credit hours*

Bee Keeping

Bee-Keeping 1 Introduction to Principles of Bee-Keeping.

Essential features of care of bees. Two lessons and one two-hour practice period.

R. C. HANDY *Three credit hours*

Bee-Keeping 2 Advanced study of life and care of bees. Three hours.

R. C. HANDY *Two credit hours*

Farm Practice

Practical Farm Work. Farm practices on University farm under foreman instructor.

R. C. HANDY

Farm Practices. List of appropriate farm practices by courses to be completed by the student.

R. C. HANDY *Three credit hours*

Physical Education

Athletics and mass games. Required of all students.

W. S. LILLY *Three periods a week*

English

Eng 1 Elementary Practical English in relation to agriculture. Four class hours.

MISS MARY L. POWERS *Four credit hours*

Eng 2 This course is a continuation of course 1. Four class hours.

HERMAN G. DIMMICK *Four credit hours*

Eng 3 Preparation of students sufficient to pass University of Delaware entrance examinations in Grammar and Composition.

PHINEAS MORRIS *Four credit hours*

Eng 4 Seminar in Literature.

PHINEAS MORRIS *Two credits*

Eng 5 Public Speaking. Principles of Public Speaking by practice.

PHINEAS MORRIS *One credit*

Mathematics

Math 1 Farm Arithmetic. Thomas's "Rural Arithmetic". Four hours a week.

MARY L. POWERS *Four credit hours*

Math 2 Farm Arithmetic. (Prerequisite: Math 1). Continuation of Math. 1. Four hours a week.

HERMAN G. DIMMICK *Four credit hours*

Math 3 Farm Arithmetic. (Prerequisite: Math 1 and 2). Problems in Burkett and Swartzel's "Farm Arithmetic." Four hours a week.

PHINEAS MORRIS *Four credit hours*

Math 4 and 5 College Entrance Mathematics. Elementary Algebra and Plane and Solid Geometry. Preparation for University examinations.

CARL J. REES, special tutor *Four credit hours*

For other courses not outlined and yet open to the more advanced students by special permission, see the catalogue of the four-year University courses and catalogue of the Summer School.

In addition to the courses outlined above each member of the Academic Faculty has scheduled two conferences a week, when by appointment, men may receive assistance.

For students entering at odd times and for those too deficient in elementary subjects to enter the Rehabilitation courses, a Unit Section has been provided which treats of elementary agriculture and academic studies for a maximum period of one year.

EXPENSES OF THE DIVISION

Tuition, books, and supplies are furnished at the expense of the U. S. Government.

Board in the dining-hall of University, per week $6.25

Room, per week . . $2.00 to 3.00

It is desired that students subscribe to the Univer-

sity paper, and join the Rehabilitation Club, which has a small fee.

The University rules governing the dormitory and general conduct apply to Rehabilitation men, as do the rules for absences and grades. A special dormitory, Linden Hall, is provided, and will care for 35 men. Lodging is found for others in hotels and private residences.

ORGANIZATIONS

A poultry association has been formed of all men who are electing poultry as a major subject. Friends of students may join by special invitation.

Rehabilitation students have an association that takes care of such activities as social meetings, and good fellowship in the student body.

A Rehabilitation student serves on the staff of the University Review, which gives news of student activities.

A complete description of the school and of its courses and methods, including the Unit Section, may be found in the separate catalogue of the Rehabilitation Division.

STUDENTS IN ATTENDANCE 1921-1922

DELAWARE COLLEGE

Abbreviations: A & S, Arts and Science; A., Agriculture; C. E., Civil Engineering; M. E., Mechanical Engineering; E. E., Electrical Engineering; Ch. E., Chemical Engineering; E., Engineering not specified.

GRADUATE STUDENTS

Clark, Joy Harold	Horticulture	Newark
Cooch, Francis Allyn, Jr.	Animal Husbandry	Newark
Kohlerman, James Harold	Chemistry	Wilmington
Koon, Ray Milton	Plant Pathology	Newark
Lukens, Arthur Lewis	Education	Wilmington
McWhorter, John Francis, Jr.	Chemistry	Middletown
Phillips, Claude Ellis	Plant Pathology	Newark
Runk, Charles Raymond	Agronomy	Newark
Schaffle, Albert Eberhard	Education	Newark
Tomhave, Arthur Edward	Animal Husbandry	Newark
Wilson, Joseph Samuel	Animal Husbandry	Georgetown
Upton, Raymond Melville	Psychology	Newark

SENIOR CLASS

Allen, Alvan	Ch. E.	Wilmington
Allmond, David Robinson, Jr.	C. E.	Wilmington
Ayerst, Albert Douglas	E. E.	Elkton, Md.
Baumgardt, William Christian	A. & S.	Richardson Park
Bugless, Edgar	E. E.	Wilmington
Carll, Robert Heath	A. & S.	Camden, N. J.
Carter, George Gray	Ch. E.	Newark
Carter, Maynard Harper	Ch. E.	Claymont
Challenger, Barclay Roberts	M. E.	Claymont
Christfield, John Gilbert	M. E.	Wilmington
Daly, Leonard Barrett	A.	Philadelphia, Pa.
Dantz, Theodore Roosevelt	A. & S.	Vineland, N. J.
Dare, Charles Rulon	Ch. E.	Jamesburg, N. J.

DeLuca, John James	A. & S.	Wilmington
Denny, Courtland Forrest	Ch. E.	Wilmington
Deppe, Florian Rudolph	M. E.	Philadelphia, Pa.
Dole, Thomas Hyde	Ch. E.	Wilmington
Draper, Milton Lowber	M. E.	Wyoming
Evans, Clarence William	A. & S.	Newark
Fletcher, Robert Paulson, Jr.	E. E.	Wilmington
Foulk, Robert North	A. & S.	Wilmington
Geoghegan, Henry Barwick	Ch. E.	Red Lion
Goffigon, Oliver Winfield	M. E.	Marionville, Va.
Gutowitz, Abraham	A. & S.	Lewes
Harmer, William Frederick	A. & S.	Philadelphia, Pa.
Harper, Joseph Howard	A.	Still Pond, Md.
Holton, Walter Dean	A. & S.	Newark
Hopkins, Melvin	A. & S.	Dover
Hurff, Leland	A.	Elmer, N. J.
Ivory, Harry Standerman	Ch. E.	Camden, N. J.
Jacobs, William F. P. Jr	E. E.	Smyrna
Kalmy, George Garabed	A.	Boston, Mass.
Keith, Thomas Muncy	A. & S.	Dover
Lilly, William Stavely, 3rd.	A. & S.	Philadelphia, Pa.
Magee, Arley Benjamin, Jr.	A. & S.	Dover
Maroney, Samuel Patterson	Ch. E.	Wilmington
McDonnell, Thomas Joseph	C. E.	Wilmington
Middleton, Leonard	A. & S.	Wilmington
Mowlds, William Lyle	A.	Edgemoor
Reed, Albert Chrisman	M. E.	Washington, D. C.
Repp, Harold Colbert	M. E.	Philadelphia, Pa.
Roemer, Louis Edward	Ch. E.	Edgemoor
Rothrock, Joseph John	A. & S.	New Castle
Schimel, Abraham	E. E.	Wilmington
Smith, Gerald Camille	M. E.	Wilmington
Smith, Walter Dent	E. E.	Wilmington
Stewart, Robert	A. & S.	Wilmington
Triggs, Willard Robinson	M. E.	Wilmington
Twoes, Stanley French	Ch. E.	Camden, N. J.
Wills, Franklin Knight	C. E.	Wilmington
Wilson, John Edwin, Jr.	A. & S.	Smyrna
Wood, Joseph Chandler	A. & S.	Wilmington

Woodrow, Charles Whitney	Ch. E.	Wilmington
Young, Howard Pollock	M. E.	Wilmington
Yap, Alfred T. L.	A. & S.	Honolulu, T. H.
Zimmerman, Harry Franklin	Ch. E.	Wilmington

JUNIOR CLASS

Bamberger, Charles A. Jr.	A. & S.	Wilmington
Barnard, Edward Reynolds	M. E.	Wilmington
Betty, Clifford Alexander	E. E.	Wilmington
Betty, Robert, Jr.	E. E.	Montchanin
Boyce, Willard Davis	A. & S.	Cheswold
Brandt, Earl DeWitt	Ch. E.	Camden, N. J.
Brown, John Wilmot	A. & S.	Wilmington
Burnite, Alvin Warrington	M. E.	Wilmington
Carr, Albert Edwin	A.	Wilmington
Carter, Herbert Hilder	E. E.	Edgemoor
Challenger, John Franklin	E. E.	Claymont
Cole, Harry Richardson	A. & S.	Dover
Collins, Theodore	A. & S.	Milford
Cook, Herman Wallace	A.	Newark
Cooper, Ezekiel, Jr.	A. & S.	New Castle
Crawford, Howard Favorite, Jr.	M. E.	Wilmington
Crothers, Wesley Gifford	A. & S.	North East, Md.
Cummings, Courtney Hampton	A. & S.	Newark
Devitt, Daniel Edwin	A.	Georgetown
Draper, Henry Carlton	A. & S.	Milton
Elliott, James Grayson	A. & S.	Delmar
Else, Frank	A.	Philadelphia, Pa.
Ewing, William Moffitt	M. E.	West Grove, Pa.
Fletcher, Northrop Rogers	M. E.	Wilmington
Fockler, Edwin Benjamin	A. & S.	North East, Md.
France, John Butz	C. E.	Wilmington
Gallo, Anthony James	A. & S.	Wilmington
Gilbert, Walter Mairs	A.	Spring City, Pa.
Grier, William Humes	A. & S.	Milford
Gundlack, Alfred	A. & S.	Philadelphia, Pa.
Hahn, James William	A.	Philadelphia, Pa.
Hawke, LeRoy Francis	E. E.	Wilmington
Hoey, Edwin Anderson	M. E.	Dover

Howard, Charles Wooster	A. & S.	Salisbury, Md.
Humphreys, Albert Orgain	A.	Wilmington
Linn, Gordon Lee Ernest	E. E.	Wilmington
Lund, Harold Mayne	A. & S.	Landenburg, Pa.
Lynch, John Mitchell	A.	Lewes
Magaw, Everett Lewis	C. E.	Marshallton
McGovern, John Joseph	C. E.	Wilmington
McManus, George Bright	A.	Wilmington
Murphy, Jay Edward	A. & S.	Milford
Murray, John Joseph	C. E.	Wilmington
Nutter, Charles Armel	A. & S.	Milford
Patton, Joseph Leslie	E. E.	Wilmington
Peirce, Edgar Herbert	A.	Embreeville, Pa.
Pitman, Edwin Price	C. E.	Delanco, N. J.
Pyle, Theodore Howell	A. & S.	Wilmington
Reynolds, Charles Willard	M. E.	North East, Md.
Robinson, Granville Stott	A. & S.	Newark
Robinson, Walter Donoho	A. & S.	Seaford
Rose, Edgar Newman	A. & S.	Newark
Rowan, Frederick Johnson	A. & S.	Newark
Stewart, Eugene Lyman	A. & S.	Baltimore, Md.
Strickler, Frank Downing	A. & S.	Wilmington
Thielman, Joseph Anthony	E. E.	New Castle
Underwood, Clarence Joseph	E. E.	Wilmington
Viohl, Herbert Kurt Wetherell	M. E.	Wilmington
Wade, Charles Norman	A. & S.	Wilmington
Webb, John Loud	E. E.	Wyoming
Wells, John Murphy	E. E.	Wilmington
Wintrup, Joseph Paul	A. & S.	Wilmington
Wise, Carl Thomas	A. & S.	Wilmington
Woodward, James Dilworth	A.	Wilmington
Yost, Howard Beidleman	E. E.	Wilmington

SOPHOMORE CLASS

Akin, Merwyn Appleton	A. & S.	Joplin, Mo.
Alexander, Granville Percival	A. & S.	Wilmington
Armstrong, Paul Arunah	M. E.	Newark
Barker, Henry Shurtleff, Jr.	A.	Lansdowne, Pa.
Baynum, Robert Ellegood	A. & S.	Milford

Betzmer, Henry Joseph	C. E.	Philadelphia, Pa.
Breuninger, George Biddle	A. & S.	Philadelphia, Pa.
Burdge, John Milton, Jr.	E. E.	Camden, N. J.
Clift, Harold William	E. E.	Wilmington
Corkran, Howard Leroy	A. & S.	Wilmington
Davis, Robert Brandon	A. & S.	Newark
Donalson, James Harmer	A. & S.	Wilmington
Downing, Clarence Burwick	M. E.	Milford
Eaton, Richard Bozman	A. & S.	Parksley, Va.
Elliott, Isaac Stidham	A. & S.	Wilmington
Fader, John Raymond	M. E.	Newark
Foster, William Richard	C. E.	Trenton, N. J.
Fox, James Fulton	M. E.	Wilmington
Frear, Joseph Allen, Jr.	A.	Wyoming
Ginn, Urie Wilson	E. E.	McDonough
Gradwohl, Franz Kolck	E. E.	Wilmington
Grier, Albert Oliver H. Jr.	M. E.	Wilmington
Grubb, Paul Hickman	A. & S.	Wilmington
Harwitz, Morris	A. & S.	Wilmington
Herman, George Robert	A.	Newtown Square, Pa.
Houghland, Geoffrey V. C.	A.	Brooklyn, N. Y.
Howard, William Edwards, Jr.	A. & S.	Salisbury, Md.
Hurst, William Price	A. & S.	Newark
Jackson, Edward Henry	E. E.	Principio Furnace, Md.
Johnson, Haywood Edward	C. E.	Philadelphia, Pa.
Johnson, Marriott Conard	Ch. E.	Lansdowne, Pa.
Kean, Edward Bland	A. & S.	Fort DuPont
Kirk, Herbert Piper	C. E.	Wilmington
Leamy, Frank Ashton	C. E.	Philadelphia, Pa.
Long, Hix, Jr.	A. & S.	Denton, Md.
Manning, William Reynolds	Ch. E.	Wilmington
McClure, Howard Richard	M. E.	Wilmington
MacDonald, Harvey Forsythe	A. & S.	Philadelphia, Pa.
McWhorter, Purnal Lynch	Ch. E.	Middletown
Mendenhall, William Kenneth	Ch. E.	Hockessin
Mortimer, John Edwin	Ch. E.	Wilmington
Murray, Charles Winston	A. & S.	Wilmington
Nunn, Horace Alfred	A.	Milford
Owens, Paul Dempster	E. E.	Perryville, Md.

Price, Clifford Banks	E. E.	Harrington
Ramsey, Richard Earl	A. & S.	Newark
Schaefer, John Henry	Ch. E.	Wilmington
Shapiro, Jacob	A. & S.	Wilmington
Shockley, Wilbur Saulsbury	A. & S.	Millsboro
Siegrist, Ralph Smith	E. E.	Holly Oak
Smith, Clifford Asbury	A. & S.	Wilmington
Smith, Eugene Morris	E. E.	Elsmere
Smith, Frederick Benson	Ch. E.	Wilmington
Smyth, James Elbert	A.	Wilmington
Taylor, Theodore	M. E.	Wilmington
Tempone, Vincent	C. E.	Philadelphia, Pa.
Terrill, Milton Willard	Ch. E.	Wilmington
Tripolitis, John Cosmas	E. E.	Chios, Greece
Vansant, Franklin Taylor	M. E.	Wilmington
Walker, George Leon	A. & S.	Wilmington
Walsh, William	A. & S.	Wilmington
Warner, Francis Reybold	M. E.	Delaware City
Williams, John Davidson	A. & S.	Newark
Willis, George Eisler	E. E.	Wilmington
Winters, Ralph Nicholas	E. E.	Ocean City, N. J

FRESHMAN CLASS

Ableman, Myer	C. E.	Georgetown
Armstrong, Edwin Victor	A. & S.	Newark
Blest, Charles Paul	C. E.	Newark
Bower, Marcy Jacquette	E. E.	Camden, N. J.
Bradfield, Frank Leslie	C. E.	Wilmington
Brown, David Abbot	C. E.	Wilmington
Cann, Roger Walcott	E. E.	Camden, N. J.
Connell, Leo Francis	M. E.	Wilmington
Crew, Leonard	E. E.	Wilmington
Crothers, Kenneth Janney	A.	North East, Md.
Cummings, Francis Joseph	A. & S.	Wilmington
Daniels, Harold Leroy	M. E.	Penns Grove, N. J.
deFord, James Reginald	A. & S.	Smyrna
Deputy, James Hudson	A.	Milford
Donaldson, William McCoy	Ch. E.	Wilmington
Dougherty, David Mitchell	A. & S.	Wilmington

Fisher, Augustus Moody	A. & S.	Dover
France, Ralph Lyle	A. & S.	Wilmington
Garatwa, Frank Ira	Ch. E.	Newark
Gibson, Charles Whitney	A. & S.	Wilmington
Gill, Charles Edward	A. & S.	Georgetown
Givan, Kenneth Day	C. E.	North East, Md.
Green, Charles Earl	A. & S.	Wilmington
Green, Peter Ayars	Ch. E.	Wilmington
Groves, John Andrew	A. & S.	Wimington
Hanby, Henry Garrett	A. & S.	Holly Oak
Hastings, Minos Francis, Jr.	A.	Delmar
Hatfield, Wilson Carlisle	A.	Greenwood
Hedger, Frank Howard	Ch. E.	Wilmington
Hock, Ralph Keller	A. & S.	Woodside
Hoffecker, John Savin	A. & S.	Newark
Houghton, Frederick Courtland	A. & S.	Newark
Hudson, Theodore Clifford	E. E.	Milford
Hunt, Russell Passmore	C. E.	Aldan, Pa.
Hurff, Howard Conover	A.	Elmer, N. J.
Ickler, Herbert	C. E.	Philadelphia, Pa.
Jackson, Harry Richardson	A. & S.	Dover
Jaggard, LaBarre Leamy	Ch. E.	West Berlin, N. J.
Jones, Ralph William	C. E.	Wilmington
Jones, Richard Alda	A.	Woodside
Krewatch, Albert Victor	E. E.	Delmar
Lank, Herbert Hayman	A. & S.	Seaford
Lank, William Jefferis	E. E.	Wilmington
Lawless, Augustus Vincent	A. & S.	Henry Clay
Leach, John Gilbert	C. E.	New Castle
Long, Richard Grant	A. & S.	Smyrna
Lovell, Francis	E. E.	Wilmington
Lowber, Harrie Campbell	A.	Dover
McCabe, Ebe Chandler	M. E.	Frankford
McCormick, Elmer Charles	A. & S.	Bridgeport, N. J.
McKelvie, William David	A.	Kennett Square, Pa.
MacMurray, John, Jr.	C. E.	Newark
Milliken, Ernest Hamilton	A.	Porters
Miller, Francis Grove	A. & S.	North East, Md.
Miller, Frederick August	C. E.	Childs, Md.

Moore, William Newton	A. & S.	Seaford
Morgan, Willard Leroy	Ch. E.	Wilmington
Muhlig, John Robert	A. & S.	Wilmington
Mullineaux, Frederick	M. E.	Wilmington
Murphy, Herbert Stetser	A. & S.	Milford
Naughton, John James	A. & S.	Philadelphia, Pa.
Neide, James Francis	C. E.	Yorklyn
O'Brien, Charles Henry	E. E.	Kelton, Pa.
O'Rourke, Walter	A. & S.	New Castle
Pierson, William Henry Frank	E.	Wilmington
Pikus, Harry	M. E.	Dover
Reitzes, Herman	A. & S.	Wilmington
Rinard, Paul Robert	A. & S.	Wilmington
Rose, Turpin Price	M. E.	Delaware City
Sbritsky, John	A. & S.	Wilmington
Seitz, George Hilary, Jr.	Ch. E.	Gordon Heights
Shaw, Paul Albert	A. & S.	Wilmington
Shuster, George Murray	E. E.	Elkton, Md.
Skewis, John Paul	A.	Milford
Snyder, John Cedric	A. & S.	Georgetown
Spaid, Charles Dalny	A. & S.	Dover
Steel, Paul Piè	A. & S.	Newark
Sylvester, Herman Clifton	A. & S.	Clayton
Tilghman, Cornelius Alfred	A. & S.	Smyrna
Turner, Alfred Hayes	E. E.	Wilmington
Turner, Thomas Russell	C. E.	Wilmington
Van Dyke, Paul Smith	A. & S.	Cecilton, Md.
Walker, John Winston	E. E.	Wilmington
Watt, Edwin P.	M. E.	Hammonton, N. J.
Wells, Theodore Carter	A. & S.	Philadelphia, Pa.
Wier, William Jefferson	A. & S.	Wilmington
Yarnall, Lloyd	M. E.	Cochranville, Pa.

SUMMARY

	Arts and Science	Agriculture	Engineering	Total
Senior	19	5	32	56
Junior	28	11	26	65
Sophomore	24	6	35	65
Freshman	37	10	40	87
	108	32	133	273
Graduate Students	3	7	2	12
Grand Total	111	39	135	285

THE WOMEN'S COLLEGE

Abbreviations: A.& S.—Arts and Science; Ed.—Education; H. E.—Home Economics; T. T.—Teacher Training.

SENIOR CLASS

Cannon, Eleanor Harris	A. & S.	Wilmington
Ferguson, Alice Mabel	H. E.	New York, N. Y.
Ferguson, Ethel	A. & S.	New York, N. Y.
Finck, Margaret Louise	A. & S.	Wilmington
Ford, Dorothy Mary	A. & S.	Wayne, N. J.
Groves, Helen	A. & S.	Marshallton
Haley, Mildred Morgan	Ed.	Wilmington
Hatfield, Marian	H. E.	Wilmington
Hollingsworth, Hannah M.	Ed.	Fairville, Pa.
Hughes, Nellie Esther	A. & S.	Felton
Lodge, L. Maud	Ed.	Dover
Marshall, Eleanor Hitchens	A. & S.	Lewes
Marvil, Grace Turner	A. & S.	Laurel
Mitchell, Elizabeth Marguerite	H. E.	Millsboro
Moffett, Anna Margaret	A. & S.	Smyrna
Ospina, Mary Alexandra	A. & S.	Wilmington
Pence, Winifred Ethel	H. E.	Newark
Philips, Augustine Louise	A. & S.	Wilmington
Porter, Vivien Winifred	A. & S.	Washington, D. C.
Rodney, Marian	A. & S.	Laurel
Tebo, Mabel Katherine	A. & S.	Dover

Troub, Isabel Alice	Ed.	Honey Brook, Pa.
Weihe, Ruth	Ed.	Washington, D. C.
Wilcox, Gladys Irene	Ed.	Wellsboro, Pa.
Wooleyhan, Elsie Leonore	A. & S.	Cecilton, Md.

JUNIOR CLASS

Ayerst, Natalie Ruth	A. & S.	Elkton, Md.
Blair, Nellie Durham	A. & S.	Wilmington
Dayett, Emma Elizabeth	A. & S.	Cooch's Bridge
Deakyne, Hannah May	H. E.	Smyrna
Deen, Mary Emma	A. & S.	Preston, Md.
Gallaher, Marion Cornelia	A. & S.	Newark
Gentieu, Esther Vivian	A. & S.	Penns Grove, N. J.
Greene, Edna Elizabeth	A. & S.	Newark
Handy, Mary Noble	A. & S.	Federalsburg, Md.
Jaquette, Alice Elizabeth	Ed.	Newark
Kane, Anna Elizabeth	A. & S.	Wilmington
King, Mary Ruth	H. E.	Bridgeville
Ledenham, Emily Ruth	H. E.	Bridgeville
Leonard, Edith	A. & S.	Philadelphia, Pa.
Lynch, Nora Frances	Ed.	Kennett Square, Pa.
McCoy, Frances Romaine	H. E.	Summit Bridge
McNeal, Elizabeth Reese	A. & S.	Newark
Massey, Sara Mildred	A. & S.	Price, Md.
Moore, Willma Faye	A. & S.	Milford
Phillips, Florence Elizabeth	A. & S.	Philadelphia, Pa.
Pool, Letitia Evans	A. & S.	Middletown
Powers, Mary L.	A. & S.	Newark
Roberts, Rose Jeffries	A. & S.	Birmingham, Ala.
Roe, Emma Lucile	A. & S.	Wilmington
Roe, Sara Spencer	A. & S.	Sudlersville, Md.
Rouse, Henrietta Gertrude	A. & S.	Bel Air, Md.
Russell, Ruth Anna	A. & S.	Milford
Shorb, Helen Duval	H. E.	Dover
Smith, Mabel Elizabeth	H. E.	Hartly
Spruance, Evelyn Lydia	H. E.	Smyrna
Walker, Elizabeth Jester	A. & S.	Wilmington

SOPHOMORE CLASS

Barwick, Mary Elizabeth	T. T.	Greenwood
Beck, Anna Louise	H. E.	Delaware City
Black, Helen Gilmore	A. & S.	Wilmington
Bland, Annie Roberta	T. T.	Newark
Bromley, Mabel Nora	T. T.	Felton
Brown, Hilda Lorrayne	A. & S.	Wilmington
Burnett, Josephine Margaret	H. E.	Morristown, N. J.
Burns, Marjorie Elizabeth	A. & S.	Wilmington
Burton, Roberta Gertrude	T. T.	Seaford
Carll, Miriam Waithman	A. & S.	Camden, N. J.
Caroll, Anna Rebecca	A. & S.	Granogue
Caulk, Margaret Elizabeth	H. E.	Blackbird
Cella, Marie Louise	A. & S.	Wilmington
Collins, Hazel Sargent	A. & S.	Newark
Cranston, Edna Everson	H. E.	State Road
Edwards, Vera Anita	H. E.	Wilmington
Elliott, Anna Louise	T. T.	Laurel
Fisher, Margaret Vivian	H. E.	Lewes
Flinn, Alice Stirling	A. & S.	Wilmington
Garrett, Lois	A. & S.	Hockessin
Givison, Mary Jackson	H. E.	New Castle
Gruwell, Mary	H. E.	Felton
Hatfield, Sara Margaret	H. E.	Georgetown
Hayman, Ruth Caroline	H. E.	Delmar
Hines, Thelma Elizabeth	T. T.	Wilmington
Holliday, Mildred Amelia	A. & S.	New Castle
Hurley, Louise	H. E.	Seaford
Jackson, Charlotte Louise	A. & S.	Wilmington
Jester, Mildred Elizabeth	T. T.	Harrington
Johnston, Madeline Elvira	T. T.	Marshallton
Jones, Madlin Bowman	A. & S.	Laurel
Le Cates, Dorris Elizabeth	T. T.	Laurel
Lovett, Sara Lydia	A. & S.	Newark
McKinsey, Greta Estelle	T. T.	Wilmington
Macintire, Elizabeth	H. E.	Lewes
Marvel, Nellie Ida	H. E.	Dover
Marvil, Anna Clayton	T. T.	Laurel
Moffitt, Mary Kathryn	A. & S.	Brenford

Mundy, Alice Mary	A. & S.	Hockessin
Patchell, Anna Mildred	A. & S.	Newark
Penrose, Frances Elizabeth	T. T.	Wilmington
Petry, Lucile	A. & S.	Selbyville
Pettibone, Lucile Gertrude	A. & S.	New Milford, Conn.
Price, Lillian Pearl	T. T.	Wyoming
Pryor, Pauline	T. T.	Clayton
Roe, Emily Peale	A. & S.	Sudlersville, Md.
Rothrock, Katherine Regina	A. & S.	Easton, Pa.
Rush, Eleanor Anna	A. & S.	Wilmington
Russell, Reba Bates	T. T.	Lewes
Skrivan, Anna	T. T.	Hartly
Sweeny, Florence Elizabeth	A. & S.	Trenton, N. J.
Vinyard, Eleanor	H. E.	Milford
Walton, Margaret Lyle	A. & S.	Iron Hill, Md.
Wills, Kathryn Howell	H. E.	Camden
Wolfenden, Mildred Everett	A. & S.	Cardington, Pa.
Worthington, Frances	H. E.	Wilmington

FRESHMAN CLASS

Allen, Eva Elizabeth	T. T.	Laurel
Allen, Hazel Louise	A. & S.	Marion, Md.
Bailey, Elizabeth Frances	A. & S.	Trenton, N. J.
Baker, Helen	A. & S.	Selbyville
Baker, Mary Amy	H. E.	Avondale, Pa.
Baldwin, Emily Emmarene	A. & S.	West Grove, Pa.
Black, Margaret Hodson	T. T.	Cecilton, Md.
Bradley, Mary Kathryn	H. E.	Jarrettsville, Md.
Brosius, Marjorie Cloud	H. E.	West Grove, Pa.
Bullock, Helen White	A. & S.	Kelton, Pa.
Burnett, Virginia Stiles	A. & S.	Morristown, N. J.
Cain, Pearl Evelyn	T. T.	Harrington
Campbell, Bernice Lauta	H. E.	Selbyville
Carr, Edith	H. E.	Wilmington
Clarke, Florence Elizabeth	A. & S.	Wilmington
Conaway, Mabel Elizabeth	H. E.	Greenwood
Conner, May Moren	A. & S.	Wilmington
Conwell, Ethel Carey	H. E.	Milton

Cooper, Dorothy	A. & S.	Newark
Danks, Delma	T. T.	Winterthur
Davis, Aline	A. & S.	Laurel
Davis, Katherine Turner	A. & S.	Georgetown
Dayett, Charlotte Willits	A. & S.	Cooch's Bridge
Dougherty, Catherine Irene	A. & S.	Wilmington
Dougherty, Mary Sue	A. & S.	West Grove, Pa.
Eisenbrey, Mary Rebecca	T. T.	Milford
Evans, Sallie Hester	T. T.	Ocean View
Frazer, Anna Elizabeth	H. E.	Newark
Goodwin, Vesta Maria	H. E.	Washington, D. C.
Hastings, Sarah Hilda	T. T.	Salisbury, Md.
Hill, Mary Elizabeth	A. & S.	Seaford
Hirshout, Rebekah	A. & S.	Wilmington
Hoffecker, Dorothy	A. & S.	Newark
Holland, Georgia Louise	T. T.	Cheriton, Va.
Hudson, Gladys, Elizabeth	H. E.	Georgetown
Hudson, Jennie Helen	T. T.	Selbyville
Jones, Eunity Helena	A. & S.	Dover
Kite, Anna Estella	A. & S.	Wilmington
Knowles, Emma	A. & S.	Greenwood
Kramer, Ollie Leone	A. & S.	New Cumberland, Pa.
Kreuger, Mary Josephine	A. & S.	Wilmington
Ladd, Kathryn Virginia	A. & S.	New Milford, Conn.
Law, Beulah Emma	A. & S.	Newark
Le Fevre, Dorothy Worth	A. & S.	Lansdowne, Pa.
Lucas, Helen	A. & S.	Massey, Md.
Lynch, Alice Johnson	A. & S.	Georgetown
McGee, Bertha Elydia	A. & S.	Selbyville
McHugh, Mary Rowan	A. & S.	Wilmington
Maciejewski, Anna Mary	A. & S.	Wilmington
Marvel, Mary Madeline	A. & S.	Seaford
Moore, Pauline	H. E.	Selbyville
Neide, Marion Elizabeth	A. & S.	Yorklyn
Nunn, Dorothy Elizabeth	H. E.	Milford
O'Niell, Mary Elizabeth	A. & S.	Wilmington
Parsons, Lenore Hastings	H. E.	Laurel
Pettibone, Alice Hunter	T. T.	New Milford, Conn.
Pruitt, Alice Myrtle	A. & S.	Trenton, N. J.

Pusey, Nellie Eva	T. T.	Laurel
Quillin, Ermine Spicer	H. E.	Laurel
Reed, Florence Alene	T. T.	Wilmington
Reed, Grace Edna	A. & S.	Hartford, Conn.
Richards, Frances Lewis	A. & S.	Greenwood
Russell, Esther Belle	T. T.	Greenwood
Scarborough, Miriam Elizabeth	T. T.	Elkton, Md.
Staton, Sarah Elizabeth	T. T.	Dover
Stidham, Florence Maybelle	H. E.	Odessa
Tempone, Philomena Mae	A. & S.	Philadelphia, Pa.
Touhey, Margaret	A. & S.	Yorklyn
Watson, Alyce Marie	A. & S.	Laurel
Webster, Sarah Maud	T. T.	Wilmington
Wintrup, Madalin	Ed.	Wilmington
Wollaston, Mary Rebecca	T. T.	Elsmere
Wong, Dorothy Tsien-Yi	A. & S.	Shanghai, China
Workman, Conolia Blanche	T. T.	Laurel

SUMMARY

	Arts and Science	Home Economics	Two-Year Education	Four-Year Education	Total
Senior	15	4		6	25
Junior	22	7		2	31
Sophomore	24	16	16		56
Freshman	40	15	19		74
Total	101	42	35	8	186

STUDENTS IN REHABILITATION DIVISION

Altland, Richard M.	Hanover, Pa.
Antrim, Earl F.	Pottstown, Pa.
Bauer, Peter C.	Philadelphia, Pa.
Beacher, Alfred	Pittsburgh, Pa.
Blackburn, Jess L.	Pittsburgh, Pa.
Bollman, Charles G.	Indiana, Pa.
Brant, Edward	Haysville, Pa.

Brant, Ephraim	Johnstown, Pa.
Brennan, James J.	Philadelphia, Pa.
Callahan, Owen.	Wilkes-Barre, Pa.
Campbell, John J.	Philadelphia, Pa.
Carnes, Cicero H.	Paris, Mich.
Cherry, Frederick	Philadelphia, Pa.
Cherry, Truman	Philadelphia, Pa.
Christian, Arthur A.	Wilkes- Barre, Pa.
Clark, Richard C.	Philadelphia, Pa.
Clowes, Clarence	Philadelphia, Pa.
Cooper, Eugene	Youngsville, Pa.
Cotton, Morton A.	Philadelphia, Pa.
Crader, Lewis	Spring Mills, Pa.
Crotty, John F.	Tarentrum, Pa.
Curtis, Ciserow D.	Berlin, Md.
DeStefano, Anthony	Philadelphia, Pa.
Dietterich, Ellwood C.	Northampton, Pa.
Douglass, Edward	Philadelphia, Pa.
Drumheller, Wharton	Pine Forge, Pa.
Duttonhoffer, George	Harrisburg, Pa.
Ehinger, William J.	Philadelphia, Pa.
Else, Frank	Philadelphia, Pa.
Ent, Lambert	Philadelphia, Pa.
Evans, John B.	Blakely, Pa.
Finkbone, Daniel P.	Reading, Pa.
Flood, William	Philadelphia, Pa.
Fox, Charles A.	Latrobe, Pa.
Fox, John J.	Norristown, Pa.
Fox, Raymond A.	White Haven, Pa.
Freas, Leon D.	Norwood, Pa.
Flynn, Joseph	Philadelphia, Pa.
Galli, Anthony	Philadelphia, Pa.
Gilbert, James C.	Holmesburg, Pa.
Gitchell, Glenn B.	Williamsport, Pa.
Goodman, Hyman	Philadelphia, Pa.
Gorski, William J.	Latrobe, Pa.
Green, Melville K.	Linden Hall, Pa.
Griffith, Sanford R.	Bolviar, Pa.
Grundy, John	Philadelphia, Pa.
Gurski, Frank	Philadelphia, Pa.

Hahn, James W.	Pen Argyle, Pa.
Harley, Allen G.	Trappe, Pa.
Harrington, Harold J.	Milford, Del.
Harvey, William M.	Philadelphia, Pa.
Hein, Frederick K.	Philadelphia, Pa.
Helmbreck, Earl J.	Saegertown, Pa.
Hepler, David E.	Hawthorne, Pa.
Hess, Mone F.	Philadelphia, Pa.
Hippensteel, Robert W.	Carlisle, Pa.
Huff, William S.	Confluence, Pa.
Humphreys, Handel	Edwardsville, Pa.
Hyde, James	Philadelphia, Pa.
Jay, Nelson E.	Norristown, Pa.
Jones, George W.	Strickersville, Pa.
Kendall, Henry	Wilmington, Del.
Kennedy, Samuel J.	Ogontz, Pa.
King, James A.	Philadelphia, Pa.
Kilner, Aaron	Hazelton, Pa.
Kleckner, Harry E.	Tamaqua, Pa.
Konegen, John L.	Marcus Hook, Pa.
Lazor, John	Mt. Pleasant, Pa.
Lenze, Albert T.	St. Marys, Pa.
Lewis, Joseph R.	Dover, Del.
Losse, Elmer D.	Cheltenham, Pa.
Lougheed, Joseph	Wilmington, Del.
Lynch, Edward	Philadelphia, Pa.
Lyons, James	Philadelphia, Pa.
McCool, Louis R.	Philadelphia, Pa.
McKinley, Hoke	Weston, W. Va.
Magill, Kirk W.	Blue Bell, Pa.
Maloumby, John	Confluence, Pa.
Marchlewski, Andrew	Wilmington, Delaware
Martin, Harry S.	Birdsboro, Pa.
Maser, Anthony J.	Mt. Washington, Pa.
Mevla, Anthony	Claymont, Delaware
Meuser, Joseph A.	Philadelphia, Pa.
Millner, William A.	Philadelphia, Pa.
Mills, Edward C	Philadelphia, Pa.
Minor, Oscar	Hallton, Pa.
Mitnick, Jacob	Philadelphia, Pa.

Morkus, Anthony	Philadelphia, Pa.
Moylan, Warren C.	Philadelphia, Pa.
Mumford, Carroll W.	Emporium, Pa.
Murphy, James J.	Philadelphia, Pa.
O'Boyle, Michael J.	Scranton, Pa.
Ovens, Edmund A.	Ashley, Pa.
Peters, William C.	Philadelphia, Pa.
Pierce, Romaine H.	Philadelphia, Pa.
Pilachowski, Adelbert P.	Philadelphia, Pa.
Pugsley, John T.	Media, Pa.
Reckner, William A.	Philadelphia, Pa.
Redline, John G.	Wilmington, Delaware
Robinson, Emanuel	Philadelphia, Pa.
Rubinstein, Jacob	Philadelphia, Pa.
Sabot, Paul	Plymouth, Pa.
Sammon, Thomas L.	Avoca, Pa.
Santarpio, Theodore	Philadelphia, Pa.
Schaefer, Roman	Philadelphia, Pa.
Schwartz, Harry P.	Philadelphia, Pa.
Schwarz, Henry	Philadelphia, Pa.
Segal, Maurice	Coatesville, Pa.
Slowey, Charles E.	Wilmington, Delaware
Smalley, Frederick G.	Dunbar, Pa.
Smith, Joseph R.	Conshohocken, Pa.
Snook, Frederick A.	Marsh Wood, Pa.
Strickler, Edward	Conshohocken, Pa.
Stripp, Philip	Jersey City, N. J.
Strong, Curtis W.	Wilmington, Delaware
Swope, John W.	Jonestown, Pa.
Swope, Oliver F.	Hanover, Pa.
Tatem, Granville H.	Bridgeton, N. J.
Thompson, Wesley E.	Philadelphia, Pa.
Thone, Lawrence	Philadelphia, Pa.
Travers, Aubury	Allenwood, Pa.
Trumbull, Ghordis D.	Upland, Pa.
Tully, John	Philadelphia, Pa.
Tupper, Robert R.	Philadelphia, Pa.
Voelker, Max	Cleveland, Ohio
Von Hofen, Paul A.	Sewickley, Pa.
Walp, Andrew S.	Wilkes-Barre, Pa.

Webb, Dorsey L.	Mers, Va.
Weller, Mervin	Middlesburg, Pa.
Wieland, Charles H.	Philadelphia, Pa.
Wysocki, Alexander	Philadelphia, Pa.
Yardley, Albert	York, Pa.
Yocum, Clarence W.	Beaver Falls, Pa.
Yocum, Maynard J.	Benton, Pa.
Zyska, Joseph	Philadelphia, Pa.

Total 133

GENERAL SUMMARY

1921-1922

DELAWARE COLLEGE

Arts, Agriculture, Engineering	285	
THE WOMEN'S COLLEGE		
Arts, Education, Home Economics ...	186	
		471
Academic Extension	48	
Summer School for Teachers, 1921	303	
Rehabilitation Department, ex-Service Men	133	
		484
Total number of persons under instruction provided and directed by the University		955

AGRICULTURAL EXTENSION WORK

Total Number of Meetings and Demonstrations	552
Total Attendance	34,335
Attendance Short Course, Seaford, Delaware...	819
Boys and Girls' Club Members	600

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BULLETIN

OF THE

NIVERSITY OF DELAWARE

OLUME XVIII NEW SERIES NUMBER 2

APRIL, 1923

ANNUAL CATALOGUE

1922-1923

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UNIVERSITY OF ILLINOIS

PUBLISHED QUARTERLY BY THE UNIVERSITY

NEWARK, DELAWARE

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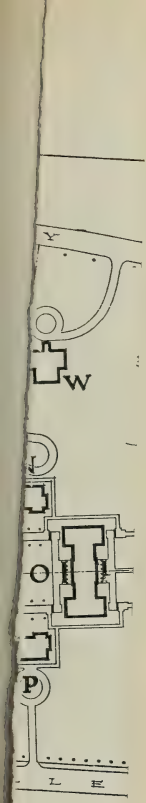

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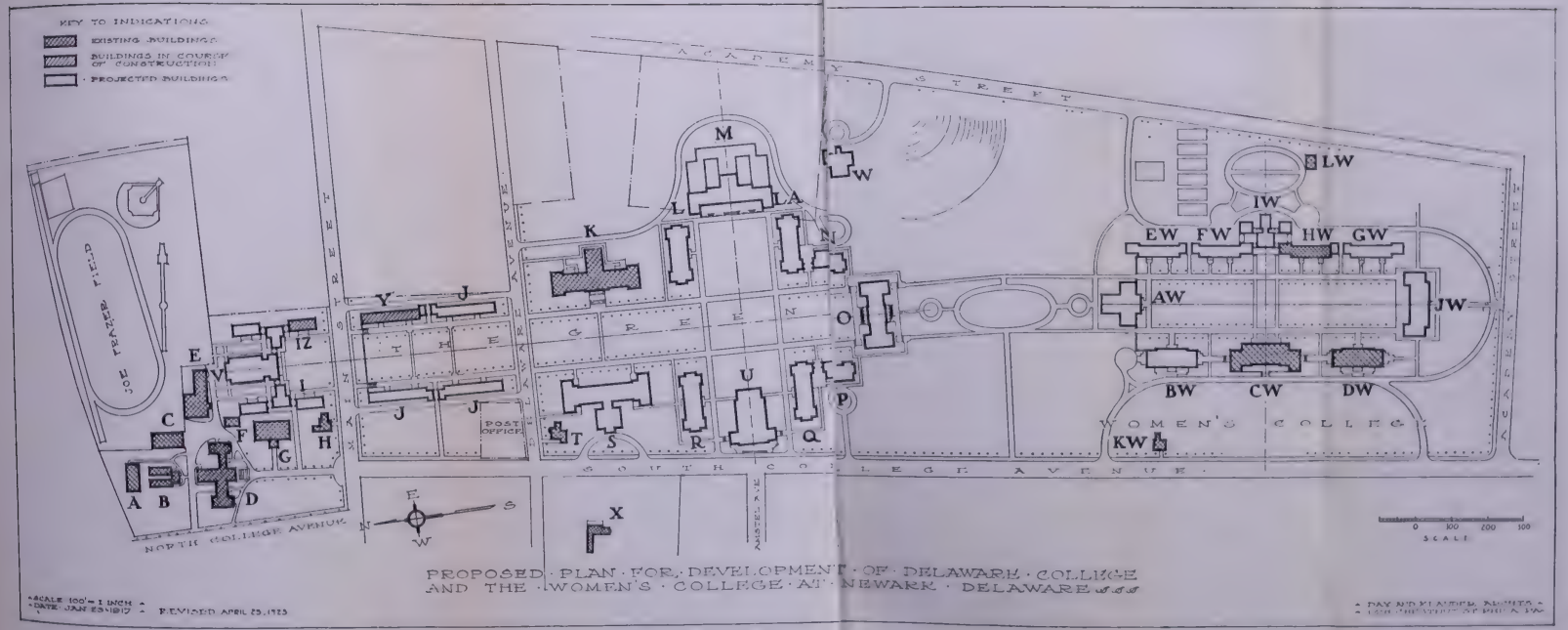

PROPOSED GROUP PLAN FOR THE DEVELOPMENT OF THE UNIVERSITY OF DELAWARE

MEN'S COLLEGE

A.	Old Heating Plant.	J-J-J.	Dormitories.	R.	Social Science.
B.	Greenhouses.	K.	Wolf Hall—Agriculture.	S.	Liberal Arts.
C.	Present Gymnasium.	L.	Physics.	T.	Infirmary.
D.	Old College.	L-A.	Recitation Building.	U.	Auditorium.
E.	Mechanical Hall.	M.	Engineering Building.	V.	Proposed Gymnasium.
F.	Board of Health Laboratory.	N.	Unassigned.	W.	New Power Plant.
G.	Recitation Hall.	O.	Memorial Library.	X.	President's Home.
H.	Purnell House.	P.	Administration Building.	Y.	Harter Hall.
I.	Future Fraternity Houses.	Q.	English.		
I-Z.	Sigma Phi Epsilon Chapter House.				

WOMEN'S COLLEGE

A-W.	Y. W. C. A.	H-W.	Sussex Hall.
B-W.	College Hall.	I-W.	Common and Social Hall.
C-W.	Science Hall.	J-W.	Unassigned.
D-W.	Residence Hall	K-W.	Practice Home.
E-W.	Dormitories.	L-W.	Old Heating Plant.
F-W.			
G-W.			

CATALOGUE

OF THE

UNIVERSITY OF DELAWARE

1922-1923

WITH

ANNOUNCEMENTS FOR 1923-1924

PUBLISHED BY THE UNIVERSITY

NEWARK, DELAWARE

1923

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CALENDAR

1923		
January 3	Wednesday	Christmas recess ends, 1.10 p. m.
Jan. 26-Feb. 3		Mid-Year Examinations
February 5	Monday	Second term begins, 8.10 a. m.
February 17	Saturday	Meeting of the Trustees, 11.15 a. m.
March 29	Thursday	Easter recess begins, 12.00 m.
April 5	Thursday	Easter recess ends, 1.10 p. m.
June 1-8		Final Examinations
June 4	Monday	Summer Term, Rehabilitation Division begins, 1.10 p. m.
June 9	Saturday	Meeting of the Trustees, 11.15 a. m. Class Day—Alumni Day—Alumnae Day
June 10	Sunday	Baccalaureate Sermon, 11.00 a. m.
June 11	Monday	Commencement Day
June 13, 14		Examinations for Admission
June 25	Monday	Summer School for Teachers opens.
August 3	Friday	Summer School for Teachers closes.
September 18, 19, 20		Re-examinations
September 19, 20		Examinations for Admission
September 21	Friday	Registration Day for Freshmen and Sophomores Convocation Exercises, 3.00 p. m.
September 22	Saturday	Registration Day for Juniors and Seniors
October 1	Monday	Fall Term, Rehabilitation Division begins, 1.10 p. m.
November 27	Tuesday	Meeting of the Trustees, 11.15 a. m.
November 28	Wednesday	Thanksgiving recess begins, 12.00 m.
December 3	Monday	Thanksgiving recess ends, 1.10 p. m.
December 22	Saturday	Christmas recess begins, 11.00 a. m.
1924		
January 3	Thursday	Christmas recess ends, 1.10 p. m.
Jan. 25-Feb. 2		Mid-Year Examinations
February 4	Monday	Second term begins, 8.10 a. m.
February 16	Saturday	Meeting of the Trustees, 11.15 a. m.
April 17	Thursday	Easter recess begins, 12.00 m.
April 24	Thursday	Easter recess ends, 1.10 p. m.
May 30-June 6		Final Examinations
June 7	Saturday	Meeting of the Trustees, 11.15 a. m. Class Day—Alumni Day—Alumnae Day
June 8	Sunday	Baccalaureate Sermon, 11.00 a. m.
June 9	Monday	Commencement Day
June 11, 12		Examinations for Admission

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THE UNIVERSITY OF DELAWARE

The University of Delaware is situated at Newark, a town of 2600 inhabitants, about half way between Philadelphia and Baltimore on the main lines of the Pennsylvania and Baltimore and Ohio Railroads running from New York to Washington. The climate is equable; the surrounding country is attractive; and the town itself has all modern improvements, including an excellent supply of artesian well water and a complete sewerage system.

Foundation

Delaware College was chartered as a private college by an Act of the Delaware Legislature in 1833, and it was first opened to students in May, 1834. With the college was merged the old Newark Academy, a preparatory school founded in 1767. As a result of a succession of misfortunes the college was closed from 1859 to 1870. It was reopened in 1870, having meanwhile been designated by an Act of the Delaware Legislature as beneficiary under the Act of Congress known as the "Morrill Act," which apportioned to each of the several states large areas of public lands to form the basis of endowments for colleges which must include in their curriculum the teaching of Agriculture, the Mechanic Arts, and Military Tactics. The college was thus under combined private and State ownership until 1913, when it came into the sole possession of the State. The Women's College, a college for women affiliated with Delaware College, was established by the

State in 1914. In 1921, by an Act of the Legislature, Delaware College and the Women's College were united under the name of University of Delaware. The Board of Trustees consists of 28 members, together with the Governor of the State, the President of the University, the Master of the State Grange, and the President of the State Board of Education, all of whom are members ex officio.

Grounds and Buildings

The grounds of the University comprise a tract of 88 acres in the heart of Newark, and a farm of 217 acres, used for purposes of instruction and experimentation. As the result of the purchase for the University in 1915 by Mr. Pierre S. du Pont of the large tract of land lying between the original campus of Delaware College and the campus of the Women's College, the University now has ample space for future development.

DELAWARE COLLEGE

Old College, a beautiful example of colonial architecture; the remodeled original building of Delaware College with its several additions. In the remodeling of this building in 1917 the brick shell of the old structure was retained, the interior being entirely rebuilt out of fireproof material. This building is the social centre of student life. It contains the Commons, the Lounge, rooms for student meetings and organizations, etc. The Faculty Club is also located here, its rooms in the East Wing having been attractively furnished through the generosity of H. Rodney Sharp, of the class of 1900.

Recitation Hall, a three-story brick building erected by the State in 1892 and used, as its name implies, mainly for lecture and recitation rooms. The Administration Offices are at present located in this building.

Mechanical Hall, a two-story brick building erected by the State in 1904, and containing now the offices, lecture rooms, drawing rooms, and shops of the Division of Mechanical Engineering.

The Gymnasium, a one-story brick building erected by the State in 1905, and containing, in addition to the main exercise floor, showers, swimming pool, and the office of the Physical Director.

Purnell Hall, a small house, originally the home of a branch of the Evans family; later used successively as a Chapter House for the Kappa Alpha Fraternity, as a home for the Y. M. C. A., and as a General Library, and now containing the offices of the staff of the Department of English.

Elliott Hall, a stone-and-brick structure purchased from the Elliott family, and now used largely for residence apartments for members of the teaching staff.

The Library, a two-story brick building providing a temporary home for the General Library.

Harter Hall, the first of the new dormitories which are to be erected on that part of the campus lying between Main Street and Delaware Avenue. This dormitory, erected in 1917, accommodates about 100 students. It was named in honor of George A. Harter, President of the College from 1896-1914.

Temporary Engineering Buildings, three one-story frame structures erected in 1920 to provide temporary housing for the Divisions of Civil and of Electrical Engineering.

Wolf Hall, a magnificent building erected in 1917 for the School of Agriculture, and named in honor of Theodore R. Wolf, Professor of Chemistry from 1871-1907. Several of the Departments of Pure Science are also housed in this building. Wolf Hall, Harter Hall, and Old College represent architecturally and physic-

ally the beginning of the University of Delaware as projected by the Alumni, and thus far realized largely through the generosity of a citizen of Delaware, Pierre S. du Pont.

The Infirmary, a two-story brick dwelling converted by the Trustees in 1916 into a hospital for the students of the college. It is under the direct superintendence of a trained nurse.

The Rehabilitation Building, a temporary building erected by the Federal Board of Vocational Training to provide offices and classrooms for the work of the Rehabilitation Division for ex-service men.

The Chapter House of the Sigma Phi Epsilon Fraternity, an attractive home of Delaware colonial design, erected in 1922, the first of the Fraternity houses to be built on the campus. The houses of the other Fraternities are at present located in other parts of the town.

THE WOMEN'S COLLEGE

Science Hall, a three-story and basement building, was erected in 1914 as the first of the two buildings to be constructed on the plot of nineteen acres purchased by the State in 1913 for the location of the Women's College. Here most of the recitation rooms, laboratories, and offices of the college are located.

Residence Hall, which was erected at the same time as Science Hall, corresponds with it in modern colonial architecture. It was intended to provide for fifty students, but later changes increased its capacity as a dormitory to sixty-three. The enlargement of kitchen and dining room, made possible by the gift of the Delaware School Auxiliary, increased the capacity of the dining hall to two hundred persons.

Sussex Hall, provision for the erection of which was made by the State Legislature in 1917 by the ap-

propriation of $125,000, was opened in 1918. It is constructed of colonial brick and corresponds in design with the general plan of colonial architecture which has been adopted for the buildings of the University. It is a three-story fire proof building and accommodates sixty-seven persons.

Two Temporary Dormitories each to house twenty-two persons were built and loaned to the college in September, 1920, by the Delaware School Auxiliary Association. They have since been made a gift to the college.

The Practice House of the Home Economics Department is a dwelling house near Science Hall on the north acquired by purchase by means of funds given to Delaware College by Mr. Pierre S. du Pont in 1915 and granted for use as a practice house in 1919.

The Model One-Room School Building located east of Wolf Hall on Academy Street was built by the Delaware School Auxiliary in 1921. It is used by the Department of Education in co-operation with the Board of Education of Newark for the Opportunity Class, a group of exceptional children. This classroom serves as a laboratory for the students of education and child psychology.

Faculty Residences. The University also owns nine brick or frame dwelling houses on the main campus, the president's home on College Avenue, and six brick dwellings on Delaware Avenue, all of which are occupied by the families of persons connected with the University.

TRUSTEES

EX-OFFICIO

The Governor, WILLIAM D. DENNEY, Dover
The President of the State Board of Education,
T. R. BROWN, M. D., Wyoming
The Master of the State Grange, ROBERT P. ROBINSON, Newport
The President of the University, WALTER HULLIHEN

H. G. M. KOLLOCK, M. D., Newark..... 1882
J. HARVEY WHITEMAN, ESQ., Wilmington..... 1892
CHARLES B. EVANS, ESQ., Newark..... 1894
WILLIAM T. LYNAM, ESQ., Wilmington..... 1897
CHARLES S. CONWELL, Camden..... 1897
L. HEISLER BALL, M. D., Marshallton..... 1900
W. WATSON HARRINGTON, ESQ., Dover..... 1900
SAMUEL H. MESSICK, Bridgeville..... 1902
JAMES E. DUTTON, Seaford..... 1904
JOHN BIGGS, ESQ., Wilmington..... 1905
SAMUEL H. DERBY, Woodside..... 1905
THOMAS DAVIS, ESQ., Wilmington..... 1908
SAMUEL J. WRIGHT, Newark..... 1910
HENRY RIDGELY, ESQ., Dover..... 1911
CHARLES M. CURTIS, ESQ., Wilmington..... 1911
EVERETT C. JOHNSON, Newark..... 1911
HENRY B. THOMPSON, Greenville..... 1912
EBEN B. FRAZER, Newark..... 1913
H. RODNEY SHARP, Wilmington..... 1915
W. H. HEALD, ESQ., Wilmington..... 1915
EDWARD A. EVANS, Cheswold..... 1916
CHARLES R. MILLER, Wilmington..... 1917
H. F. DU PONT, Winterthur..... 1918
HARRY L. CANNON, Bridgeville..... 1918
HENRY P. SCOTT, Delaware City..... 1920
WARREN C. NEWTON, Bridgeville..... 1922
FRANK L. GRIER, M. D., Milford..... 1922

Advisory Council of the Women's College

MRS. ALFRED D. WARNER, Wilmington..... 1914
MRS. WILLIAM P. BANCROFT, Wilmington..... 1914
MRS. CHARLES B. EVANS, Newark..... 1914
MRS. FRANK BANCROFT, Camden..... 1920
MRS. SAMUEL H. MESSICK, Bridgeville..... 1920

OFFICERS OF THE BOARD OF TRUSTEES

HENRY B. THOMPSON, *President*
SAMUEL H. MESSICK, *Vice-President*
CHARLES B. EVANS, *Secretary*

Executive Committee

HENRY B. THOMPSON, *Chairman*

WALTER HULLIHEN
CHARLES R. MILLER
H. RODNEY SHARP
CHARLES M. CURTIS
S. H. DERBY
HENRY RIDGELY

Finance

CHARLES R. MILLER, *Chairman*

WILLIAM H. HEALD
HENRY P. SCOTT
JOHN BIGGS
H. RODNEY SHARP
CHARLES B. EVANS

Grounds and Buildings

H. RODNEY SHARP, *Chairman*

HARRY L. CANNON
SAMUEL J. WRIGHT
H. F. DU PONT
E. C. JOHNSON

Agriculture

S. H. DERBY, *Chairman*

H. F. DU PONT
S. H. MESSICK
ROBERT P. ROBINSON
HENRY P. SCOTT

Instruction

HENRY RIDGELY, *Chairman*

WALTER HULLIHEN
S. H. MESSICK
W. W. HARRINGTON
E. C. JOHNSON
HARRY L. CANNON
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Professor of Ancient Languages and Literatures

EDWARD LAURENCE SMITH, A. M. * *Dean of Delaware College*
Professor of Modern Languages and Literatures

MERRILL VAN GIESEN SMITH, M. E. *Acting Dean of Engineering*
Professor of Mechanical Engineering

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Professor of Plant Pathology and Soil Bacteriology

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Dean of the Women's College

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and Head of Department of Animal Industry

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HOWARD KENT PRESTON, C. E. *Professor of Engineering*

ROBERT WILLIAM THOROUGHGOOD, C. E
Professor of Civil Engineering

THOMAS ALEXANDER BAKER, S. B.
Professor of Animal Husbandry

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*Deceased, January 16, 1923

GEORGE LEE SCHUSTER, S. M. *Professor of Agronomy*

GEORGE ALBERT KOERBER, E. E.
Professor of Electrical Engineering

LAURA VEACH CLARK, A. B. *Professor of Home Economics*

LATHE BURTON ROW, Maj., Inf., U. S. A.
Professor of Military Science and Tactics

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EZRA BRECKINRIDGE CROOKS, Ph. D.
Professor of Philosophy and Social Sciences

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RAYMOND MELVILLE UPTON, S. B.
Director of Division of Rehabilitation

LOUIS REINHOLD DETJEN, S. M.
Associate Professor of Horticulture

HAROLD EDWARD TIFFANY, S. M.
Associate Professor of Chemistry

FINLEY MELVILLE KENDALL FOSTER, Ph. D.
Associate Professor of English

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GEORGE HERBERT RYDEN, A. M.
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WILLIAM PITT MORSE, Capt. Inf. U. S. A.
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RAYMOND WATSON KIRKBRIDE, S. B. *
Assistant Professor of Modern Languages

RACHEL TAYLOR *Director of Fine and Industrial Arts*

THOMAS DARMORE SMITH, S. B.
Assistant Professor of Mathematics

CARL JOHN REES, A. B. *Assistant Professor of Mathematics*

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* On leave of absence

CHARLES RAYMOND RUNK, S. B.
Assistant Professor of Agronomy

CARL SEIB RANKIN, C. E.
Assistant Professor of Engineering and Mathematics

LEO BLUMBERG, E. E. *Assistant Professor of Engineering*

ALICE MARIE KRACKOWIZER, A. M.
Assistant Professor of Education

JOHN LINTON COYLE *Instructor in Shop Work*

DORA WILCOX *Instructor in Music*

MIRIAM ELLEN NULL, A. B. *Instructor in Home Economics*

AGNES SNYDER, A. B. *Instructor in Education*

WILLIAM FRANCIS LINDELL, S. B. *Instructor in Engineering*

ELIZABETH GAMBLE KELLY, A. M.
Instructor in Home Economics

JOY HAROLD CLARK, S. B. *Instructor in Horticulture*

ARTHUR EDWARD TOMHAVE, S. B.
Instructor in Animal Husbandry

ALEXANDER BLAIR, JR., A. B.
Instructor in English and History

DOROTHY AILEEN CALEF, S. M. *Instructor in Biology*

MARION CHASE PARKHURST *Instructor in Physical Education*

ALDEN WADSWORTH GRAVES, A. B. *Instructor in English*

ISADORE LEVINE, A. M. *Instructor in Modern Languages*

HENRY RAYMOND BAKER, S. B. *Instructor in Biology*

ANGELA MARIE WEISS, A. B. *Instructor in French and Spanish*

ADA WILLIM, S. B. *Assistant in Chemistry*

ANNA LOIS RITZ, A. B. *Assistant in Art*

STANDING COMMITTEES OF THE UNIVERSITY FACULTY

ADMISSION: Professor Dutton, *Chairman;* Dean McCue, Miss Snyder, and Miss Null.

EXTENSION: Professor Wilkinson, *Chairman;* Professor Drake, and Professor Thoroughgood.

GRADUATE STUDIES AND RESEARCH: Dean McCue, *Chairman;*

Professor Sypherd, Professor Manns, Professor Dutton, Professor Drake, and the Deans, ex officio.

PUBLICITY: Assistant Professor Rees, *Acting Chairman;* Assistant Professor Runk, Miss Taylor, and Miss Parkhurst.

PUBLIC AND SOCIAL FUNCTIONS: Assistant Professor Rankin, Major Row, Assistant Professor Rees, Miss Kelly, and Miss Calef.

SCHEDULES: Associate Professor Foster, *Chairman;* Assistant Professor Rees, Assistant Professor Blumberg, Assistant Professor T. D. Smith.

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Assistant to the Business Administrator, Edwina Long
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Director of the Commons, Vernette H. Huntley
Assistant to the Director of the Commons, Marion E. Skewis
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Assistant in Library, Mabel C. Armstrong
Assistant in Library, Ethel Campbell
Librarian of the Women's College, Martha Barrow

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M. O. PENCE, S. B. — *State Leader of County Agents*
ALEXANDER D. COBB, S. B. — *State Leader Boys' and Girls' Clubs*
KATHRYN E. WOODS — *State Leader of Home Demonstration*

*Deceased, January, 1923.

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Specialist in Truck Crops and Plant Diseases
THOMAS F. MANNS, Ph. D. *Specialist in Plant Diseases*
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RUSSELL E. WILSON, S. B.
County Agricultural Agent, Kent County
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AGNES P. MEDILL *County Club Agent, New Castle County*
HELEN L. COMSTOCK, S. B. *County Club Agent, Kent County*
DOROTHY EMERSON *County Club Agent, Sussex County*

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THOMAS F. MANNS, Ph. D.
Plant Pathologist and Soil Bacteriologist
E. M. R. LAMKEY, Ph. D. *Plant Physiologist*
T. A. BAKER, S. B. *Animal Husbandryman*
C. C. PALMER, S. M., D. V. M. *Consulting Veterinarian*
GEORGE L. SCHUSTER, S. M. *Agronomist*
LESTER W. TARR, S. B. *Chemist*
LOUIS R. DETJEN, S. M. *Associate Horticulturist*
JAMES F. ADAMS, Ph. D. *Associate Plant Pathologist*
G. V. C. HOUGHLAND *Assistant Agronomist*
J. HAROLD CLARK, S. B. *Assistant Horticulturist*
GEORGE L. BAKER, S. B. *Assistant Chemist*
*H. R. BAKER, S. B. *Assistant Animal Industry*
A. E. TOMHAVE, S. B. *Assistant Animal Husbandry*
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ETHEL BRANDT *Academic Department*
GEORGE BUTTLES *Physical Education*
WINIFRED S. BACH, A. B. *Secretary*

*In co-operation with the State Board of Agriculture.

THE UNIVERSITY

The University of Delaware embraces the following departments of work:

DELAWARE COLLEGE

The School of Arts and Science
The School of Agriculture
The School of Engineering

THE WOMEN'S COLLEGE

The School of Arts and Science
The School of Education
The School of Home Economics

GRADUATE STUDY AND RESEARCH
AGRICULTURAL EXTENSION
THE SUMMER SCHOOL
ACADEMIC EXTENSION

THE AGRICULTURAL EXPERIMENT STATION

THE REHABILITATION DIVISION

REQUIREMENTS FOR ADMISSION

GENERAL REGULATIONS

Candidates for admission to the Freshman class must be at least 16 years of age and of good moral character. They must (1) be graduates of standard four-year high or preparatory schools, or (2) have spent four full years as students in such schools, and in addition sustain examinations at the University in *all* subjects which they present for entrance. The examinations are given on the days prescribed in the calendar of the University. All candidates, whether they are graduates of high schools or not, are required to present 15 units as entrance credits.

Students should enter at the beginning of the first term. Applicants will not be permitted to enter the University after the beginning of the first term, unless they have completed an amount of work equivalent to the work already done by the classes which they wish to enter.

All applications and credentials from candidates for admission to Delaware College should be sent to the Committee on Admission before August 1. Those not received by this time will not be acted upon by the Committee until after September 1. All applications and credentials from candidates for admission to the Women's College should be sent to the Dean of the Women's College.

SPECIFIC REQUIREMENTS

Fifteen units are required for entrance.

A unit, according to a statement formulated by the National Conference Committee on Standards of Colleges and Secondary Schools, represents a year's study in any subject in a secondary school, constitut-

ing approximately a quarter of a full year's work. A four-year secondary school curriculum should be regarded as representing not more than sixteen units of work.

The foregoing statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute periods or their equivalent.

REQUIRED UNITS FOR ADMISSION TO SCHOOLS OF DELAWARE COLLEGE

	Arts and Science Units	Engineering Units	Agriculture Units
English* (4 years)	3	3	3
Mathematics—			
Algebra	1	1½	1
Plane Geometry	1	1	1
Solid Geometry†	..	½	..
Foreign Language‡	2	2	2
History	1	1	1
Science	1	1	1
	9	10	9
Elective	6	5	6
Total	15	15	15

*Applicants for admission must present four years of English. If they have pursued this study five full periods a week throughout the four years of their high school course, they may receive four units of credit.

†Applicants for admission to the School of Engineering of

REQUIRED UNITS FOR ADMISSION TO SCHOOLS OF THE WOMEN'S COLLEGE

	Arts and Science Units	Education Units	Home Economics Units
English* (4 years)	3	3	3
Mathematics—			
Algebra	1	1	1
Plane Geometry	1	1	1
Foreign Language‡	2	2	2
History	1	1	1
Science	1	1	1
	9	9	9
Elective	6	6	6
Total	15	15	15

ELECTIVES

The applicant for admission to either college must offer electives from the following list sufficient to bring the total number of units up to 15.

Foreign Languages

Greek	2 units
Latin	2 units
French	2 units
German	2 units
Spanish	2 units

Delaware College who have not completed Solid Geometry must take it in college without credit.

‡Latin, Greek, French, German, Spanish. All applicants must present two units in one foreign language or be conditioned and required to take one year of foreign language in college without credit. This requirement may *not* be satisfied by the presentation of one unit in one language and one unit in another language.

History	
Ancient	1 unit
Medieval and Modern	1 unit or 2 units
English	1 unit
American	½ or 1 unit
Civics	½ unit
Mathematics	
Solid Geometry	½ unit
Plane Trigonometry	½ unit
Science	
Botany	½ or 1 unit
Chemistry (See Note 6)	½ or 1 unit
Physics (See Note 6)	½ or 1 unit
Physical Geography	½ or 1 unit
Physiology	½ unit
Zoology	½ or 1 unit
Biology	½ or 1 unit
General Science	1 unit
Vocational Subjects	See Note 5

Note 1. All applicants are required to present a minimum of 15 units; and no condition is permitted in any subject except as provided for Foreign Language in note, page 23. Beginning with 1924 no applicant will be admitted with any conditions.

Note 2. Candidates for the degree of Bachelor of Arts must offer four years of Ancient Language (4 units of Latin, or 2 units of Latin and 2 units of Greek) for entrance, or complete in college what they lack of this requirement.

Note 3. All candidates for admission are examined in English Composition in order to test their ability to do the required English of the Freshman year. Examinations are held in June and September. Candidates are advised to take the examinations in June. Those who fail will have the opportunity of

working privately on the subject during the summer or of taking a course in English in the six weeks' Summer Session.

Note 4. Applicants who present a Modern Foreign Language for entrance and expect to continue the subject will be required to take a test given by the Modern Language department in order that they may be placed in the class in which they are qualified to do satisfactory work. This test will not affect the value of their credits in the subject in so far as entrance is concerned. Conditions in Foreign Language must be made up by means of additional work in college.

Note 5. Elective units in vocational subjects to the number of three will be accepted from graduates of the four-year Smith-Hughes High School course. Graduates from this course may also offer for entrance two units from the list on page 24 in place of the regular requirements in Foreign Language.

Note 6. Chemistry and Physics should include laboratory work and experiments by the pupils in accordance with national standards. Where such laboratory and experimental work has not been done, only ½ unit of entrance credit will be given for the year's work in the subject.

DETAILED EXPLANATION OF THE REQUIREMENTS FOR ADMISSION

The following detailed explanation of the requirements for admission is based on Bulletin 96, published by the College Entrance Examination Board. It is intended as a guide to those high school teachers who wish to give the best preparation possible to pupils who expect to go to college, and also as a means by which they may be aided in their efforts to bring their own courses to the highest possible point of effectiveness. In place of the textbooks named in this explanation, other textbooks covering equivalent ground may be substituted.

English

Candidates should be prepared in accordance with the following requirements:

(1) Habits of correct, clear, and truthful expression. This part of the requirement calls for a carefully graded course in oral and written composition, and for instruction in the practical essentials of grammar, a study which ordinarily should be reviewed in the secondary school. In all written work constant attention should be paid to spelling, punctuation, and good usage in general as distinguished from current errors. In all oral work there should be constant insistence upon the elimination of such elementary errors as personal speech-defects, foreign accent, and obscure enunciation.

(2) Ability to read with intelligence and appreciation works of moderate difficulty; familiarity with a few masterpieces. This part of the requirement calls for a carefully graded course in literature. Two lists of books are provided from which a specified number of units must be chosen for reading and study. The first, designated as the A List, contains selections appropriate for the earlier years in the secondary school. These should be carefully read, in some cases studied, with a measure of thoroughness appropriate for immature minds. The second, designated as the B List, contains selections for closer study warranted in the later years. The progressive course formed from the two lists should be supplemented, at least by home reading on the part of the pupil and by classroom reading on the part of pupils and instructor. It should be kept constantly in mind that the main purpose is to cultivate a fondness for good literature and to encourage the habit of reading with discrimination.

The A List

From each group two selections are to be made, except that for any book in Group V a book from any other may be substituted.

Group I. Dickens: A Tale of Two Cities; George Eliot: Silas Marner; Scott: Quentin Durward; Stevenson: Treasure Island or Kidnapped; Hawthorne: The House of the Seven Gables.

Group II. Shakspere: Merchant of Venice; Julius Cæsar; King Henry V; As You Like It.

Group III. Scott: The Lady of the Lake; Coleridge: The Ancient Mariner; and Arnold: Sohrab and Rustum. A collection of representative verse, narrative and lyric. Tennyson: Idylls of the King (any four). The Aeneid or The Odyssey in a

translation of recognized excellence, with the omission, if desired, of Books I—V, XV, and XVI of The Odyssey.

Group IV. The Old Testament (the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther); Irving: The Sketch Book (about 175 pages); Addison and Steele: The Sir Roger de Coverly Papers; Macaulay: Lord Clive; Parkman: The Oregon Trail; Franklin: Autobiography.

Group V. A modern novel; a collection of short stories (about 150 pages); a collection of contemporary verse (about 150 pages); a collection of prose writings on matters of current interest (about 150 pages); two modern plays. All selections from this group should be works of recognized excellence.

The B List

One selection is to be made from each group.

Group I. Shakspere: Macbeth, Hamlet.

Group II. Milton: L'Allegro, Il Penseroso, and either Comus or Lycidas; Browning: Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus," Instans Tyrannus, One Word More.

Group III. Macaulay: Life of Johnson; Carlyle: Essay on Burns, with a brief selection from Burns' Poems; Arnold: Wordsworth, with a brief selection from Wordsworth's Poems.

Group IV. Burke: Speech on Conciliation with America; a collection of orations, to include at least Washington's Farewell Address, Webster's First Bunker Hill Oration, and Lincoln's Gettysburg Address.

Examination

The examination will test powers of correct, clear, truthful expression, the faithfulness with which the candidate has read and studied the books in the A List and the B List. The candidate will write one or more compositions several paragraphs in length. The subjects may be suggested in part by the books in the A List, but a sufficient number from other sources will make it possible for the candidate to draw upon his own experience and ideas. He will not be expected to compose at a more rapid rate than three hundred and fifty words an hour, but his work must be free from common errors in grammar, idiom, spelling, and punctuation, and should show that he understands the

principles of unity and coherence. In addition, questions may be asked on the practical essentials of grammar, such as the construction of words and the relation of various parts of a sentence to one another. The candidate will be expected to have an intimate knowledge of the books in the B List.

He will be required to submit a statement certified by his principal specifying what books he has read during his secondary school course, and indicating the quality and character of his spoken English.

History and Civil Government

In each of the subjects except Civil Government, the following preparation is required:

1. Historical instruction in a high school or academy for one year to the extent specified in the definition of the Unit of Admission Requirements.

2. The study of an accurate historical textbook, in which not less than 500 pages of text are devoted to the particular subject.

3. Collateral reading of appropriate selections, in books of a less elementary nature, amounting to at least 500 pages.

4. The ability to compare historical characters, periods, and events, and in general the power to combine in orderly fashion the results of reading, and to exercise judgment as well as memory.

5. The ability to locate places historically important and to describe territorial changes and other historical movements on an outline map, acquired from the study of physical as well as political geography with the aid of map work.

Ancient History

One Unit

This course should devote one-half of the year to the study of the history of the ancient Orient and of Greece as far as the death of Alexander and the break-up of his empire, with the study of Western Hellas to the death of Timoleon. The second half-year should be devoted to the study of the history of Rome as far as the death of Charlemagne. During this half-year time should be found for the study of the Hellenistic Period of Greek history and the merging of the story of Greece with the story of Rome.

Medieval and Modern History

ONE UNIT

The broad plan of this course should be to devote one-quarter of the year's work to the period prior to about 1300 A. D., closing with the death of Pope Boniface VIII; the second quarter should carry forward to about 1660, closing with the readjustments in the treaties of Westphalia and of the Pyrenees; the third quarter should close with the Congress of Vienna in 1815; and the fourth quarter should be adjusted so as to give the last half of the time to events since 1878, with the purpose of explaining clearly the causes and the issues of the war of 1914.

Modern History

ONE UNIT

After a brief survey of the international and colonial development since the age of discovery, the course should begin with a cross-section of the governmental, social, and cultural conditions in Europe about 1660 A. D. The absolute monarchy of Louis XIV, the parlimentary government of England, the enlightened despotism of Frederick the Great, and the republican government of Revolutionary France and the imperialism of Napoleon should be studied as types of government in the transition from medieval feudalism to present-day democracy. Attention should be given to the growth of National states and to the leading international and colonial problems since 1660 which culminated in the British Empire with its self-governing dominions, the partition of Africa, the awakening of the Far East, and the great international rivalries of the present generation. Emphasis should be laid upon the Industrial Revolution—its political and social aspects—and some attention should be given to the leading features of the internal history of England, France, and Germany. The study of the last century should include some account of the great material changes, important inventions, and intellectual, social, and humanitarian movements.

English History

ONE UNIT

The division of the work between the two half years should be made at about 1660. During the first half-year, the periods of the early Plantagents (Henry II and Edward I), of the Tudors, and of the early Stuarts should receive emphasis. In the second half-year, starting with the Restoration, attention should first be given to the continued struggle between Crown and Parliament, culminating in the establishment of responsible

government. The great wars with France, the imperial policy of England, and the great revolution in agriculture, industry, and transportation, should also be carefully studied, as well as the economic, social, and political life. In general, it is desirable to emphasize the important epochs and the greater movements rather than to give each reign equal stress.

American History*

One Unit

The course in American history should be so arranged that the work of the first half-year will include the administration of John Quincy Adams, whereas that of the second half-year will include events of recent occurrence. In the work of the first half-year considerably more time should be spent on the period from 1763 to 1829 than on the period from early time to 1763; and in the work of the second half-year more time should be given to the period since the Civil War than to that before.

For the guidance of both teachers and students the following suggestions are made:

1. That such topics as the routes of the principal discoverers and explorers, the resulting claims and settlements, campaigns of the principal wars, and territorial growth of the United States be studied primarily as map work.

2. That the European background should be given particular attention during the colonial period and during the national period to 1823.

3. That the various attempts at colonial union, the experiments in federal government, and the growth of federal power be especially emphasized.

4. That too much time should not be given to the topics of slavery, secession, and the reconstruction period. Instead, special attention should be paid to territorial expansion, and social and industrial growth.

5. That special importance should be accorded the policy of the United States in foreign affairs, tariff, banking, civil service, currency, corporation control, conservation of national resources, capital and labor, and other present day problems.

6. That familiarity with the lives of great Americans should be especially encouraged.

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* Teachers who desire a list of suggested topics for study in this course should consult Bulletin No. 96 of the College Entrance Examination Board.

Civil Government*

One-Half Unit

Civil government in the United States (national, state, and local), its constitution, organization, and actual working.

The candidate will be expected to show such knowledge of the field as may be acquired from the study of a good textbook of not less than 300 pages, supplemented by collateral reading and discussion.

For the guidance of both teacher and student the following list of topics is suggested:

1. The purpose of government, including prevention of crime, care of dependents, preservation of public health, education, taxation, conservation of natural resources, immigration, and control of commerce.

2. The division of power and of activities among federal, state, and local governments.

3. The federal government: its organization and working.

4. State government: its organization, scope, and problems.

5. Local government, with special attention to the forms and problems of municipal government.

6. Parties: their function and organization; the machinery of nomination and election.

7. Attempts at reform: initiative and referendum, recall, short ballot, etc.

Note.—The above named list of topics is not intended to be exhaustive, but rather to suggest such representative topics as should be included in the school course.

American History and Civil Government

One Unit

Candidates who wish to offer American history and civil government should devote approximately two-thirds of the allotted time to the study of American history and one-third to the study of civil government. How this division of time should be arranged must be left to the experience of the individual teachers, since the practice has been found to vary so widely that no general direction can be given.

In the time devoted to the study of American history, the course should cover lightly the period of discovery and settlement and the colonial period to 1763. The period from 1763 to

* Teachers who desire a list of suggested topics for study in this course should consult Bulletin No. 96 of the College Entrance Examination Board.

1837 should be covered with care. In the same way less emphasis may be placed upon the period from the end of the administration of Andrew Jackson to 1865, in order that time may be found to stress the period since the Civil War.

In the time devoted to the study of civil government the student should make a careful study of the Constitution of the United States, of the federal government, its powers, organization and workings; should understand the relations between the state and federal government, and the general nature and extent of the powers reserved to the states.

Latin

Grammar: The regular inflections and common irregular ones; syntax and vocabulary of the prose authors read in school; structure of sentences in general, indirect discourse, and the uses of the subjunctive.

Elementary Prose Composition, sentences designed to test the candidate's knowledge of grammatical construction.

Amount and Range of the Reading Required

(1) The Latin reading, without regard to the prescription of particular authors and works, should be not less in amount than Caesar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-V.

(2) The amount of reading specified above should be selected by the schools from the following authors and works: Caesar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

Suggestions Concerning Preparation

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—just at it stands; the sentence should be read and understood in the order of the original, with the full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded, and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated,

gathered in the way described above, should finally be expressed in clear and natural English.

Greek

Grammar: The inflections; the simpler rules for composition and derivation of words; syntax of cases and the verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive.

Elementary Prose Composition, consisting principally of detached sentences to test the candidate's knowledge of grammatical construction.

Xenophon: The first four books of the Anabasis.

Homer-Iliad, I-III: The first three books of the Iliad (omitting II, 494-end), and the Homeric construction, form, and prosody.

Prose Composition, consisting of continuous prose based on Xenophon and other Attic prose of similar difficulty.

Sight Translation of Attic prose of no greater difficulty than Xenophon's Anabasis.

Xenophon and Sight Translation of Prose.

Homer-Iliad, I-III, and Sight Translation of Homer.

French

Two Units

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax.

3. Abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

4. The reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences (the teacher giving the English) and in reproducing from memory sentences previously read.

5. Writing French from dictation.

During the second year the work should comprise:

1. The reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches.

2. Constant practice, as in the previous year, in translating into French easy variations upon the texts read.

3. Frequent abstracts, sometimes oral and sometimes written, of portions of the texts already read.

4. Writing French from dictation.

5. Continued drill upon the rudiments of grammar, with constant application in the construction of sentences.

6. Mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

German

Two Units

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The memorizing and frequent repetition of easy colloquial sentences.

3. Drill in the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs and the more usual strong verbs; also in the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order.

4. Abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

5. The reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise:

1. The reading of from 150 to 200 pages of literature in the form of easy stories and plays.

2. Accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages.

3. Continued drill upon the rudiments of the grammar directed to the ends of enabling the pupil, first, to use his or her knowledge with facility in the formation of sentences, and secondly, to state his or her knowledge correctly in the technical language of grammar.

Spanish

Elementary Spanish (First and Second Years)

TWO UNITS

During the first year the work should comprise:

1. Careful drill in pronunciation.

2. The rudiments of grammar, including the inflection of the regular and more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax.

3. Abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.

4. The reading of about 100 pages of graduated texts, with constant practice in translating into Spanish easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read.

5. Writing Spanish from dictation.

6. Memorizing of Spanish passages of conversational prose and of simple verse.

During the second year the work should comprise:

1. The reading of about 200 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches.

2. Constant practice, as in the previous year, in translating into Spanish easy variations upon the texts read.

3. Frequent abstracts, sometimes oral and sometimes written, of portions of the texts already read.

4. Continued study of the elements of grammar and syntax, and the use of a composition-book.

5. Mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses.

6. Writing Spanish from dictation.

7. Memorizing of Spanish passages of conversational prose and of simple verse.

Elementary Algebra

ONE UNIT

The four fundamental operations for rational algebraic expressions.

Factoring, determination of highest common factor and lowest common multiple by factoring.

Fractions, including complex fractions, and ratio and proportion.

Linear equations, both numerical and literal, containing one or more unknown quantities.

Problems depending on linear equations.

Radicals, including the extraction of the square root of polynomials and of numbers.

Exponents, including the fractional and negative.

ONE AND ONE-HALF UNITS

The foregoing requirements and the following:

Quadratic equations, both numerical and literal.

Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations.

Problems depending on quadratic equations.

Plane Geometry

ONE UNIT

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurements of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of lines and plane surfaces.

Solid Geometry

ONE-HALF UNIT

The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle.

The solution of numerous exercises, including loci problems.

Applications to the mensuration of surfaces and solids.

Physics

ONE UNIT

1. The course of instruction in Physics should include:

(a) The study of one standard text-book, for the purpose of obtaining a connected and comprehensive view of the subject.

(b) Instruction by lecture-table demonstrations, to be used mainly for illustration of the facts and phenomena of physics in their qualitative aspects and in their practical applications.

(c) Individual laboratory work consisting of experiments requiring at least the time of 30 double periods, two hours in the laboratory to be counted as equivalent to one hour of classroom work. The experiments performed by each student should number at least 30.

The aim of laboratory work should be to supplement the pupil's fund of concrete knowledge and to cultivate his power of accurate observation and clearness of thought and expression. The exercises should be chosen with a view to furnishing forceful illustrations of fundamental principles and their practical applications.

2. Throughout the whole course special attention should be paid to the common illustrations of physical laws and to their industrial applications.

3. In the solution of numerical problems, the student should be encouraged to make use of the simple principles of algebra and geometry to reduce the difficulties of solution.

Chemistry

ONE UNIT

The following requirement has been planned so as to make it equally suitable for the instruction of the student preparing for college and for the student not going beyond the secondary school.

The candidate's preparation in chemistry should include:

(1) Individual laboratory work, comprising at least forty exercises.

(2) Instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

(3) The study of at least one standard text-book, to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry.

Biology, Botany, Zoology

ONE UNIT EACH

These courses should be developed on the basis of laboratory study guided by definite directions. This should be supplemented by the careful study of at least one modern elementary text-book. At least one-half of the time should be devoted to the practical studies of the laboratory. Pupils should be encouraged to do supplementary work in the field of natural history, especially if good nature studies have not preceded the high school course. A note-book, with carefully labeled out-

line drawings of the chief structures studied anatomically, with notes on demonstrations, and in explanation of drawings, with descriptions of experiments, with dates and with index, should be prepared by the pupil in connection with practical work.

Physical Geography

ONE UNIT

The most essential facts and principles of physical geography should be studied in the class room and laboratory. The order of presentation is not essential in general in the order given.

The field of physical geography in secondary schools includes (1) the earth as a globe, (2) the ocean, (3) the atmosphere, and (4) the land. Each topic should be treated so as to show its causal relations to other topics, and, so far as possible, the effects of earth features on life conditions should be emphasized.

Freehand Drawing

ONE UNIT

The pupil's preparation in freehand drawing should be directed toward training him in accurate observation and in definite and truthful representation of form, without attempt to represent color or color values.

The pupil should learn to draw correctly with lines of good quality simple form in correct perspective in the size in which it is felt in the plane of the drawing, or larger or smaller. It is recommended that pupils should be taught to draw from the object itself rather than from the flat.

Correctness of proportion and accuracy in the angles and curves and structural relations of the parts of every object drawn are of the highest importance.

The elementary principles of perspective are to be thoroughly learned and the pupil should be able to apply them in freehand drawing from the object or from the imagination.

Mechanical Drawing

ONE UNIT

In the time available for mechanical drawing in most secondary schools, only very elementary courses in the subject should be undertaken, and thoroughness in fundamentals should be the main feature of such courses. Thus, for example, instead of requiring the pupil to make elaborate drawings, inked, tinted, and shaded, the effort should be, first of all, to teach him the correct methods of making drawings in pencil. Teachers of mechanical drawing should be particularly watchful during the early part of a course to insist that the pupil use only the correct methods. Likewise, in the study of any form of projection, the object should be to understand the fundamental prin-

ciples rather than to make elaborate drawings. Work which is merely copying or which can be done only by depending constantly upon help from the instructor is not the kind of training desired. A course in mechanical drawing should be one in the application of fundamental principles and not one in copying.

Physiology

ONE-HALF UNIT

A college preparatory course in Physiology should include a study (1) of the structure of the human body, both gross and minute, and (2) of the general use of the various tissues and organs of the body and their relation to one another. In the first instance, the structure of the body should be studied by beginning with the smallest units of structure, learning how they are formed into tissues and organs, and also the reasons for grouping certain organs into systems. The physiology of the body systems should cover the science in a general way. No attempt should be made to have the pupil assimilate a mass of detail and experimental facts, but rather to have him become familiar with the general phases of the role played by the various organs and systems in the body economy.

ADMISSION TO ADVANCED STANDING

Candidates for entrance to an advanced class in any of the courses are required either to sustain examinations in all studies of the course up to the point at which they seek admission, or to present from other colleges certificates covering such studies.

SCHEDULE OF ENTRANCE EXAMINATIONS

Entrance examinations will be held at the college in Newark on Wednesday and Thursday, June 13 and 14, 1923; also on Wednesday and Thursday, September 19 and 20, 1923.

English—1.00-2.30, Thursday, June 14, and Thursday, September 20.

Modern Language—3.00-4.30, Thursday, June 14, and Thursday, September 20.

Mathematics—9.00-12.30, Thursday, June 14, and Thursday, September 20.

History—1.00-4.30, Wednesday, June 13, and Wednesday, September 19.

Latin—9.00-10.30, Wednesday, June 13, and Wednesday, September 19.

Greek and Physics—10.30-12.30, Wednesday, June 13, and Wednesday, September 19.

Hours for examinations in other subjects will be arranged for with the candidates who offer such subjects.

REQUIREMENTS FOR GRADUATION

Candidates for graduation from any of the Schools of the University must satisfy the following requirements:

1 A prescribed number of credit term-hours of work.

2 Twelve to twenty-four term-hours of Physical Training.

3 Sixty honor points, these honor points to be estimated on the basis of two points for the grade of "A" in a one-credit-hour course and one point for the grade of "B" in a one-credit hour course.

The specific number of credit term-hours is stated in the explanatory statements preceding the outlines of courses of the Schools of Delaware College and of the Women's College.

GRADUATE AND RESEARCH WORK

The University offers facilities for advanced study and research in certain departments. Such study or research may be undertaken either in candidacy for the Master's degree or as an independent project. The Experiment Station, with its corps of investigators devoting their entire time to scientific research, affords especial advantages for and stimulus to research in problems in the fields of chemistry, biology, and related subjects. All graduate work for advanced degrees as well as all research work by members of the faculty and others is under the supervision of the Committee on Graduate Studies and Research, and applications for financial or other assistance from the Board of Trustees and all other matters relating to graduate study and research must be referred to that Committee.

MASTER'S DEGREE

The Master's degree is awarded to graduate students who have shown marked proficiency in advanced studies and ability to do original work. Each candidate must complete successfully a course of graduate study in accordance with the following regulations:

Committee in Charge of Graduate Work

The work of all candidates for the Master's degree is under the general supervision of the Committee on Graduate Studies and Research and the immediate direction of the department in which the major is taken, the instructor in charge serving as a member of the Committee for the consideration of all matters pertaining to the candidate's work.

Admission

Formal application, including a statement of the proposed program of study as approved by the in-

structor in charge of the major subject, must be submitted to the Committee on Graduate Studies and Research for approval. Students are advised to mature their plans and make application before the opening of the college year. As a rule applications submitted later than October 1 cannot be approved.

Program of Study

Graduates of the University of Delaware or of any other college of approved standing may, on the satisfactory completion of an approved program of study, receive the degree of Master of Arts or Master of Science. The minimum amount of work accepted for either degree is one full year (the equivalent of thirty semester hours) of resident graduate study.

The program of study may include work in one or more departments or fields of study, provided not less than one-half is devoted to a major subject and the whole shows a consistent plan pursued with a definite purpose. The major must include a piece of research or constructive work representing the equivalent of not less than five semester hours of credit. The report on this work is to be presented in the form of a thesis, approved by the department in which the major is taken, and must be filed with the Registrar at least two weeks before Commencement Day.

Transfer of Undergraduate Credit

Advanced undergraduate courses may in cases approved by the Committee on Graduate Studies and Research be taken to apply toward the requirements of the minor subjects, not to exceed six credit hours, but extra credit earned during the undergraduate course may not be transferred for graduate credit except as follows: If at the beginning of the first or second semester of his senior year a student has so far completed his work for the Bachelor's degree that his program is not full, he may elect one or more

courses which may count toward the Master's degree, subject to the approval of the Committee.

Character of Master's Degree

The Master's degree conferred depends upon the character of the Bachelor's degree preceding it. The A. M. follows the A. B., the S. M. follows the S. B. This practice may, in the discretion of the Committee, be departed from in cases where the undergraduate degree was obtained in an institution which gives only the A. B. degree in the College of Arts and Science.

Expenses

Candidates for the Master's Degree will be charged with the following fees in addition to laboratory fees:

1 Registration Fee, $5.00 (unless already paid as an undergraduate in the University of Delaware).

2 Incidental Fee, $20.00; one half payable at time of registration; one half at the beginning of the second term of study.

3 Diploma Fee, $10.00.

PROFESSIONAL ENGINEERING DEGREES

A graduate in Engineering who has been engaged in acceptable professional work for a period of not less than five years after receiving the degree of Bachelor of Science, may be awarded the professional degree of C. E., M. E., E. E., or Ch. E., according to the preceding Bachelor's degree. A candidate for one of these degrees must declare his candidacy and file with the Committee on Graduate Studies and Research a detailed statement covering his professional study and experience not later than October 1 preceding the commencement at which he desires to receive the degree. Prior to May I next succeeding, he must submit an acceptable thesis upon some theme previously approved by the Faculty of the School of Engineering. The

thesis must be prepared in accordance with the Rules Governing Work for Professional Degrees formulated by the Faculty of the School of Engineering. The candidate, if successful, will be notified and must present himself at commencement to receive the degree.

DIVISION OF ACADEMIC EXTENSION

The Division of Academic Extension, created in 1920, is maintained for the purpose of affording to persons who are unable to attend regular University classes an opportunity to utilize a portion of their time in systematic study. Owing to its limited facilities and the consequent inability of the University to meet all of the demands upon it for extension courses, the policy during the current year has been to restrict the work offered chiefly to the needs of teachers in service.

In accordance with this policy eight classes have been conducted at five different centers, namely, Dover, Elkton, Georgetown, Newark, and Wilmington. In each case the instructor in charge of the class is a member of the regular university faculty, and the work given is such that, when satisfactorily completed, the credits earned are accepted as applicable toward the Elementary Teacher's Diploma or the bachelor's degree or, in some instances, an advanced degree.

A list of the courses given in 1922-23 follows:

Ed 12E	**The Modern School.** Miss Alice M. Krackowizer. Given in Georgetown. Three credit hours.
Ed 12E	**The Modern School.** Miss Krackowizer. Given in Wilmington. Three credit hours.
Ed 51-52	**Educational Administration.** Professor W. A. Wilkinson. Given in Newark. 6 credit hours.
E 46	**The English Novel.** Dr. F. M. K. Foster. Given in Newark. Three credit hours.
FA 8	**Drawing and Industrial Arts.** Miss Rachel W. Taylor. Given in Dover. Two credit hours.
ML 1-2	**Beginning French.** Professor G. E. Brinton. Given in Newark. Six credit hours.
ML 5-6	**Advanced French.** Professor G. E. Brinton. Given in Newark. Six credit hours.
ML 21-22, 23-24	**Elementary and Advanced Spanish.** Mr. I. Levine. Given in Elkton, Md. Twelve credit hours.

Since the University has no funds available for this purpose all extension classes must be financially self-supporting. To meet the actual cost of instruction, travel, and necessary incidentals students are required to pay a small tuition fee for each course taken.

The University desires to serve, through its Division of Academic Extension, as many communities in the State as possible with its limited teaching staff, without impairing the instruction in regular classes. All inquiries concerning extension classes will receive prompt attention.

AGRICULTURAL EXTENSION

The Division of Agricultural Extension was established by an act of the Legislature in 1911. The work is largely supported by a Federal appropriation, known as the Smith-Lever fund, and is supplemented by State Appropriations.

The function of the Extension Division is to carry Agricultural information out into the rural districts of the State and to demonstrate how such information may be put into advantageous practice. The aims of the Division are better farming; better farm houses; better farm life; better business methods on the farm; more economic distribution of farm products; and the inculcation of a deep-rooted love and enthusiasm for farm life in the boys and girls of the farm homes.

The Division is organized for extension work among men and women, and boys and girls. Each county has a county agricultural agent and a county club agent; the women's work is supervised by a Home Demonstration Agent for the entire State. These workers in various parts of the State are assisted in every way possible by the specialists in the School of Agriculture and the Experiment Station at the College.

As a co-operating agency the farmers themselves have organized County Farm Bureaus, which look largely to the county agents for inspiration and guidance.

All Agricultural Extension work is conducted on the project plan, and is based upon the fundamental economic needs of the farm industries of the various farm communities.

THE EXPERIMENT STATION

The Delaware College Agricultural Experiment Station was made possible by an act of Congress passed in 1887, known as the Hatch Act. Under the provisions of this act each state received an annual appropriation of $15,000 for the establishment of an Agricultural Experiment Station. This amount was supplemented in 1906 by an act known as the Adams Act, which carries an annual appropriation of $15,000 for the use of the Agricultural Experiment Station.

The function of the Experiment Station is to carry on research work in the field of plant and animal production and products. The object of such research work is to add to the sum of human knowledge relative to plant and animal uses, and to improve agricultural practices.

The Experiment Station has a separate research library, research laboratories, and staff. It is carrying on investigations in field crops, soils, plant diseases, animal diseases, animal production, fruit culture, vegetable culture, soil bacteriology, plant breeding, agricultural chemistry, and the physiological reactions of plants.

The results of the investigational work of the Station are published from time to time in bulletins which are distributed free to all farmers in the State who may wish them.

The laboratories and offices of the Experiment Station are located in Wolf Hall. A considerable portion of the college farm is given over entirely to experimental work in Agriculture.

DELAWARE COLLEGE

FACULTY

Delaware College

WALTER HULLIHEN, Ph. D., D. C. L. *President*
GEORGE ABRAM HARTER, Ph. D.
Professor of Mathematics and Physics
ELISHA CONOVER, A. M.
Professor of Ancient Languages and Literatures
EDWARD LAURENCE SMITH, A. M. * *Dean of Delaware College and Professor of Modern Languages and Literatures*
MERRILL VAN GIESEN SMITH, M. E. *Acting Dean of Engineering and Professor of Mechanical Engineering*
CLINTON OSBORNE HOUGHTON, A. B. *Professor of Biology*
WILBUR OWEN SYPHERD, Ph. D. *Professor of English*
CHARLES ANDREW MCCUE, S. B. *Dean of Agriculture*
CHARLES LYNDALL PENNY, A. M., Sc. D. *Professor of Chemistry*
THOMAS FRANKLIN MANNS, Ph. D.
Professor of Plant Pathology and Soil Bacteriology
CHARLES CONGER PALMER, S. M., D. V. M.
Professor of Bacteriology and Hygiene and Head of Department of Animal Industry
GEORGE ELLIOTT DUTTON, A. M. *Professor of English*
WILLIAM ALBERT WILKINSON, A. M.
Professor of Psychology and Education
RAYMOND WALTER HEIM, A. M.
Professor of Agricultural Education
GUY ERWIN HANCOCK, S. M., E. E. *Professor of Physics*
HOWARD KENT PRESTON, C. E. *Professor of Engineering*
ROBERT WILLIAM THOROUGHGOOD, C. E.
Professor of Civil Engineering
THOMAS ALEXANDER BAKER, S. B.
Professor of Animal Husbandry
GEORGE LEE SCHUSTER, S. M. *Professor of Agronomy*
GEORGE ALBERT KOERBER, E. E.
Professor of Electrical Engineering
LATHE BURTON ROW, Maj., Inf., U. S. A.
Professor of Military Science and Tactics
RALPH B. HARRIS, A. M. *Professor of Business Administration*
WILSON LLOYD BEVAN, Ph. D. *Professor of European History*

*Deceased, January 16, 1923

EZRA BRECKINRIDGE CROOKS, Ph. D.
Professor of Philosophy and Social Sciences

ALBERT SHERMAN EASTMAN, Ph. D. *Professor of Chemistry*

RAYMOND MELVILLE UPTON, S. B.
Director of Division of Rehabilitation

LOUIS REINHOLD DETJEN, S. M.
Associate Professor of Horticulture

HAROLD EDWARD TIFFANY, S. M.
Associate Professor of Chemistry

FINLEY MELVILLE KENDALL FOSTER, Ph. D.
Associate Professor of English

ROY SPARKS, Capt. Inf., U. S. A.
Associate Professor of Military Science and Tactics

GEORGE HERBERT RYDEN, A. M.
Associate Professor of American History and Political Science

WILLIAM PITT MORSE, Capt. Inf., U. S. A.
Associate Professor of Military Science and Tactics

WILLIAM JAMES MCAVOY, C. E.
Associate Professor of Physical Education

REINHOLD EUGEN SALESKI, A. M.
Assistant Professor of Modern Languages

GEORGE ELDER BRINTON, Ph. B.
Assistant Professor of Modern Languages

RAYMOND WATSON KIRKBRIDE, S. B. *
Assistant Professor of Modern Languages

THOMAS DARMORE SMITH, S. B.
Assistant Professor of Mathematics

CARL JOHN REES, A. B. *Assistant Professor of Mathematics*

CHARLES RAYMOND RUNK, S. B.
Assistant Professor of Agronomy

CARL SEIB RANKIN, C. E.
Assistant Professor of Engineering and Mathematics

LEO BLUMBERG, E. E. *Assistant Professor of Engineering*

JOHN LINTON COYLE *Instructor in Shop Work*

WILLIAM FRANCIS LINDELL, S. B. *Instructor in Engineering*

JOY HAROLD CLARK, S. B. *Instructor in Horticulture*

ARTHUR EDWARD TOMHAVE, S. B.
Instructor in Animal Husbandry

ALEXANDER BLAIR, JR., A. B.
Instructor in English and History

ALDEN WADSWORTH GRAVES, A. B. *Instructor in English*

ISADORE LEVINE, A. M. *Instructor in Modern Languages*

HENRY RAYMOND BAKER, S. B. *Instructor in Biology*

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* On leave of absence

STANDING COMMITTEES

ADMISSION: Professor Dutton, *Chairman;* Dean McCue, Acting Dean M. Van G. Smith, and Assistant Professor Brinton.

ADVANCED STANDING: Dean McCue, *Chairman;* Acting Dean M. V. G. Smith.

ATHLETICS: Faculty Representatives on the Athletic Council—Professor Sypherd, *President;* Professor Preston, *Vice-President;* Director of Athletics, Mr. McAvoy, *Manager.*

COLLEGE HOUR: Professor Wilkinson, *Chairman;* Professor Ryden.

LIBRARY: Professor Sypherd, *Chairman;* Professor Harter, Professor Bevan, Professor Houghton, Professor Palmer.

PRIZES AND SCHOLARSHIPS: Professor Conover, *Chairman;* Professor Eastman, Professor Preston, Professor Schuster.

PUBLIC AND SOCIAL FUNCTIONS: Assistant Professor Rankin, *Chairman;* Major Row, Assistant Professor Rees, Professor Heim.

PUBLICATIONS: Professor Sypherd, *Chairman;* Dean McCue, Associate Professor Foster, Assistant Professor Saleski.

SCHOLARSHIP AND DISCIPLINE: Dean McCue, *Chairman;* Professor Crooks, Acting Dean M. V. G. Smith, Professor Dutton, Professor Thoroughgood.

STUDENT SCHEDULES: Arts and Science ————————, *Chairman;* Professor Conover. Agriculture—Dean McCue, *Chairman;* Professor T. A. Baker, Professor Schuster. Engineering—Acting Dean M. V. G. Smith, *Chairman;* Professor Koerber, Professor Thoroughgood, Professor Penny.

STUDENT SELF-HELP: Professor Harris, *Chairman;* Professor Detjen, Professor Runk, Professor Ryden.

The Standing Committees of the Faculty of the Women's College will be found in the Women's College section of this catalogue.

For University Faculty Committees, see page 17.

SCHOOL OF ARTS AND SCIENCE

The work of the School of Arts and Science is designed, in general, to prepare the student to meet problems of modern life and thought by training him for the duties of citizenship by means of an education that is cultural and informing, and which should cultivate in him a love of learning. It endeavors to impart to him that knowledge and to instill in him that sense of discipline which are essential to useful and forceful living, and which will enable him to think clearly and to express his thoughts logically, accurately, and concisely. To this end, it has as one of its main objects the development in the student of the power of logical deduction, quickness of perception, and sound judgment.

Specifically, it aims (1) to give the student an adequate foundation for graduate study leading to higher degrees, and for the pursuit of advanced studies, whether literary, scientific, or technical; and (2) to fit him to pursue intelligently and profitably studies that will prepare him for business and for the professions of journalism, law, medicine, teaching, and theology.

REQUIREMENTS FOR GRADUATION

Candidates for graduation are required to complete 122 credit term-hours of work in addition to Military Science. Beginning with the class of 1926, students are required to complete also three hours per week each year in the Department of Physical Education.

In addition to fulfilling these specific requirements, candidates for degrees must also obtain sixty honor points, to be estimated on the basis of two points for

the grade of A in a one-credit-hour course, and one point for the grade of B in a one-credit-hour course.

Graduates from the School of Arts and Science who have offered for admission or have completed in college four years of Ancient Language will receive the degree of Bachelor of Arts; all other graduates will receive the degree of Bachelor of Science.

PRESCRIBED SUBJECTS

	Credits
English	16
History	12
Mathematics	8
Modern Languages	12
Science (Bacteriology, Botany, Chemistry, Mineralogy and Geology, Physics, Physiology, Zoology)	12
	60
Military Science	12

FRESHMAN YEAR

First Term	H.*	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
History, 1	3	3	History, 2	3	3
Language—Latin, French, or German	3	3	Language—Latin, French, or German	3	3
Mathematics, 3	4	4	Mathematics, 4	4	4
Elective--One subject: (Botany, Chemistry, Greek, Latin, Physiology)	–	3	Elective--One subject: (Botany, Chemistry, Greek, Latin, Physiology	–	3
		16			16
Military Science	3	1.5	Military Science	3	1.5
		17.5			17.5

*The capital letters H. and C. refer to Actual Hours and Credit Hours, respectively.

SOPHOMORE, JUNIOR, AND SENIOR YEARS

At the beginning of the Sophomore year, every candidate for the degree of Bachelor of Arts or Bachelor of Science shall select from the following list a major study, in which he shall complete thereafter 18 hours of work.

During these three years students must take, in addition to the required work in Military Science, all prescribed subjects not completed in the Freshman year and elective courses sufficient to make a total of thirty credit term-hours each year.

MAJOR ELECTIVES

Bacteriology, Physiology, and Hygiene
Biology
Business Administration
Chemistry
Education
English
French or German
Greek or Latin
History
Mathematics
Philosophy
Physics

ELECTIVE COURSES

	1st Term	*2d Term*
Ancient Languages, see pages 57, 58.		
Bacteriology, 1 and 2	3	3
Bacteriology, 3	3	–
Biology, 1, 2, 3, 4	3	3
Biology, 5, 6	2	2
Biology, 7, 8	3	3
Biology, 9, 10	2 or 3	2 or 3
Biology, 11, 12	2	2
Business, 1, 2, 3, 4	3	3
Business, 5, 6, 7, 8	3	3
Business, 9, 10, 11, 13	3	3
Chemistry, see pages 62 ff.		
Education, 32	–	3
Education, 41, 42	3	3
English, 11	3	–
English, 19	3	–
English, 28	–	3
English, 33, 40	3	3
English, 45, 46	3	3
History, 13, 14	3	3
History, 21 and 22	3	3
History, 29 and 30	3	3
History, 31, 32	2	2
History, 33, 34	1	1
Horticulture, 33	3	–
Hygiene, 3 and 4	1	1
Mathematics, 5, 6	4	4
Mathematics, 9 and 10	3	3
Mathematics, 13	2	–
Modern Languages, see pages 78 ff.		
Philosophy, 1, 2	3	3
Philosophy, 3, 4	3	3
Physics, 1, 2	3	3
Physics, 3, 4	1.5	1.5
Physics, 10	–	3.5
Physiology, 1, 2	3	3
Psychology, 1, 2	3	3
Sociology, 1, 2	3	3

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Ancient Languages and Literatures

PROFESSOR CONOVER

Throughout the course the aim is to enable the student to acquire facility and quickness in reading at sight and familiarity with the ancient order of thought. Word-meaning is fixed by inspecting form, derivation, and comparison with synonyms. The authors are selected with a view to their representative character. The public and private life of the Greeks and Romans and their influence on modern literature and civilization are continually kept before the minds of the students. English derivatives and words kindred to all Indo-European tongues are frequently noted, and the general principles of comparative philology are explained and applied.

LATIN

AL 1 and 2 Cicero, De Senectute or De Amicitia. Ovid, Metamorphoses, etc. Pliny, Selected Letters. Prose Composition.

Six credit hours

AL 3 and 4 Livy, 21st or 22d Book. Horace, Odes, Epodes, Satires, Epistles.

Six credit hours

AL 5 and 6 Tacitus, Germania and Agricola. Plautus, Captives and Trinummus. Juvenal, Satires.

Six credit hours

AL 7 and 8 Seneca, Tragedies or Moral Essays. Terence, Adelphoe and Andria. Quintilian, Books X and XII. Lectures on Latin Literature and Inscriptions.

Six credit hours

GREEK

AL 21 and 22 White's First Greek Book.

Six credit hours

AL 23 and 24 Anabasis I-IV. Homer, Iliad, I-III.

Six credit hours

AL 25 and 26 Lysias, Orations. Plato, Apology and Crito. Aristophanes, Plutus or Clouds.

Six credit hours

AL 27 and 28 Demothenes, Orations. Lucian, Dialogues. Aeschylus, Prometheus Bound.

Six credit hours

AL 29 and 30 Greek Prose Composition. [Omitted in 1923-1924.]

Four credit hours

AL 31 and 32 Greek Testament. [Omitted in 1923-1924.]

Four credit hours

Bacteriology, Physiology, and Hygiene

PROFESSOR PALMER AND MR. H. R. BAKER

BACTERIOLOGY

Ba 1 and 2 General Bacteriology.

Six credit hours

Ba 3 Advanced Bacteriology.

Three credit hours

PHYSIOLOGY

Phy 1 Physiology of Digestion, Metabolism, and Nutrition.

Three credit hours

Phy 2 Physiology of Respiration, Circulation, etc.

Three credit hours

HYGIENE

Hyg 3 and 4 Hygiene and Sanitation.

Two credit hours

For a detailed statement of courses in this Department see School of Agriculture, pp. 101, 102.

Biology

PROFESSOR HOUGHTON AND MR. H. R. BAKER

The aim of biological instruction is to give the student some knowledge of the various living things by which he is surrounded, and to develop habits of careful observation and com-

parison. Most of the time devoted to this work is spent in careful study in the laboratory, which is supplied with simple and compound microscopes, reference works, microtome, reagents, etc. There is also an excellent collection of illustrative specimens and charts.

B 1 and 2 Elementary Zoology. A study of variations in the structure and life history of the different classes of animals, their habits, and relations. The student secures a general knowledge of the principles of classification based upon the evolution of the animal kingdom, and the principles of Zoology. Selected types of the principal groups of animals, from Protozoa to Mammalia, of which dissections, drawings, and notes are required, are studied in the laboratory. One recitation or lecture and four hours of laboratory work a week. Required of Juniors in Agriculture. Elective for Arts and Science students.

Six credit hours

B 3 and 4 Systematic and Economic Zoology. (Prerequisite: B 1 and 2). In this course the student become acquainted with a large number of our common vertebrates and learns something of their structure, life histories, habits, and economic importance. Much attention is given to the work of tracing typical specimens, representing as many groups as possible, of Fishes, Batrachians, Reptiles, Birds, and Mammals, by means of keys which are based largely upon structural characters. Four hours of laboratory work a week. Elective for students in Arts and Science and in Agriculture.

Four credit hours

B 5 and 6 Economic Entomology. A course treating of the more important injurious insects of orchard, garden, and field crops, also the insect pests of domestic animals and the household. The work deals with their structure, life histories, and descriptions, and the most approved methods for their control. The most important forms are placed before the class for careful examination and comparison. Special emphasis is laid upon the necessity for the ready determination of species. Two recitations or one recitation and two hours laboratory work a week. Elective for students in Arts and Science and in Agriculture.

Four credit hours

B 7 and 8 General Botany. As is indicated by its title, this is a general course in botany which aims to give the student a comprehensive idea of the subject as a whole. The topics to which particular attention is given in the first term are as follows: Seeds and seedlings; roots, stems, and leaves; the morphology, evolution, and taxonomy of the Thallophyta, Bryophyta, and Pteridophyta. In the second term the principal topics are as follows: The Gymnospermae; winter buds; the flower and fruit of the higher seed plants; the morphology and taxonomy of the Angiospermae, ecology, and economic botany. One recitation or lecture and four hours of laboratory work a week. Required of Freshmen in Agriculture. Elective for Arts and Science students.

Six credit hours

B 9 and 10 Systematic and Economic Botany. (Prerequisite: B 7 and 8). A course dealing with economic plants other than staple crops and ornamentals. It includes studies of plants poisonous to man and poisonous or injurious to live stock; medicinal plants and their cultivation; collection and preparation of plants for the drug trade; weeds, their dispersal and eradication, etc. This course is designed especially to meet the needs of Pre-Medical students and those in the course of Agriculture who wish to pursue further studies in botany. One recitation or lecture and two or four hours of laboratory work a week.

Four or six credit hours

B 11 and 12 Systematic and Economic Entomology. (Prerequisite: B 5 and 6). An advanced course in entomology dealing with the structure, habits, and economic importance of insects not studied in B 5 and 6. Considerable time will be devoted to disease-transmitting forms, and to a study of laboratory methods in economic entomology. Field work in studying and collecting insects will be required and the student will be expected to prepare a representative collection of insects which will become his property when the course is completed. Four hours of laboratory work a week.

Four credit hours

Business Administration

PROFESSOR HARRIS

The aim of this department is to give its students a thorough knowledge of general economics and of the principles underlying all business, with particular attention to some of the more important aspects of commercial and industrial life.

Bus 1 and 2 Economics. A foundation course in the principles of Economics, both theoretical and practical, designed as a foundation for, and required as a prerequisite to all other Business courses except Business 9 and 10. The history, structure, and development of economic activity; modern production, money, labor, and other phases of human relationships. Open to Juniors and Seniors.

Six credit hours

Bus 3 and 4 Business Law. This course covers a detailed study of the Law of Contracts, the Law of Negotiable Instruments, Torts, Agency, Real and Personal Property, and the legal phases of the various types of business organization. The principles involved in these divisions of law, together with the study of cases emphasizing the points covered, constitute the basis of the work. Open to Seniors in Arts and Science, and required of Senior Engineers, except Chemical.

Six credit hours

Bus 5 and 6 American Railroad Transportation. A careful study of the railroad system of the United States, in its relation to the economic development of the country; the financial, business, and inter-railway organization of the various systems both past and present, together with a detailed analysis of the several branches of the service. Special emphasis is given in this course to the study of the documents, service rules, etc., that are necessary for shippers to know in order to make adequate use of the railroad facilities. Open to Seniors.

Six credit hours

Bus 9 and 10 Accounting. An elementary study of the theory and practice of bookkeeping and accounting; single and double entry; trial balances, income sheets, balance sheets, interpretation of accounts; columnar books. In this course an attempt is made to emphasize the principles involved in account-

ing work together with the study of the uses and purposes of accounting from a managerial point of view, rather than that of mere bookkeeping technique. Open to Juniors and Seniors.

Six credit hours

Bus 11 and 12 Investments. This course deals with the general principles involved in the selection of securities for investment purposes. A study is made of the characteristics of Railroad, Public Utility, Industrial, and Governmental issues, together with the economic conditions which affect the prices and value of these securities. The work involves text study coupled with problems of various kinds covering the analysis of financial statements, the study of prospectuses and reports, etc. Open to Seniors. [Omitted in 1923-1924].

Six credit hours

Bus 13 and 14 Advanced Economics. (Prerequisites: Bus 1, 2, 9 and 10). The object of this course is to supplement the course in General Economics with a detailed study of the economic aspects of ordinary business and social relations. The course involves a careful study of the principles involved in the fields of Finance, Banking, Marketing, Insurance, Business Organization and Control, Labor Problems, Communism, etc. together with the problem of Government Regulation and Control of these relations. Open to Seniors.

Six credit hours

Chemistry

PROFESSOR PENNY, PROFESSOR EASTMAN, AND ASSOCIATE PROFESSOR TIFFANY

The courses in Chemistry are designed to have a general educational value as well as to offer special technical training. The non-technical student may receive a general knowledge of the science, especially in Inorganic Chemistry and in Qualitative Analysis. Students in Agriculture and Engineering and pre-medical students may find much that will be indispensable in their several professions. Students intending to follow Chemistry as an occupation may receive such instruction in the theoretical phases of the subject, and such training in practice as will fit them to fill responsible positions as chemists.

C 11 and 12 Inorganic Chemistry. These courses, con-

sisting of experimental lectures, with text-book and occasional quizzes, two hours a week through the year, treat of the more important elements and their compounds. The treatment is adapted to the needs of those beginning the subject. Students in Agriculture and in Civil, Electrical, and Mechanical Engineering are required to take C 13 and 14 also.

PROFESSOR PENNY *Four credit hours*

C 13 **Qualitative Analysis.** This is an elementary course in qualitative analysis, with some preliminary exercises in chemical experiments, designed for students who are not specializing in chemistry. The subject is taught by means of lectures, recitations, and, chiefly, laboratory practice. It includes tests for the more common metals; a sufficient number of samples are analyzed by the student to give a fair understanding of the principles and methods. Three hours a week.

ASSOCIATE PROFESSOR TIFFANY *One credit hour*

C 14 **Qualitative Analysis.** This course is a continuation of C 13, which it follows, in the second term. Tests for the more important acids are studied, and further practice is given in the analysis of unknown substances. Three hours a week.

ASSOCIATE PROFESSOR TIFFANY *One credit hour*

C 15 **Qualitative Analysis.** This course is designed for students in Chemical Engineering or those specializing in Chemistry. It is given in the first term only and covers about the same ground as the two courses C 13 and 14, viz., the principles and practice of elementary qualitative analysis, with some preliminary exercises in chemical experiments. Six hours a week.

ASSOCIATE PROFESSOR TIFFANY *Two credit hours*

C 16 **Advanced Qualitative Analysis.** This course is a continuation of C 15, which it follows, in the second term. It is designed to give a more thorough understanding of the subject than is possible in the more elementary courses. Tests for the rarer metals and acids are studied. The use of the spectroscope is taught. Many mineralogical and commercial samples are analyzed. Six hours a week.

ASSOCIATE PROFESSOR TIFFANY *Two credit hours*

C 21 and 22 Organic Chemistry. (Prerequisite: C 11 and

12). Three hours per week of class room work, consisting of lectures, quizzes, and written exercises.

PROFESSOR EASTMAN *Six credit hours*

C 23 and 24 Quantitative Analysis. (Prerequisites: C 11 and 12 and 13 or 15). This is a laboratory course consisting of six hours of laboratory work per week, which is supplemented by one hour of class room discussion. The methods of calculation for volumetric and gravimetric analysis are emphasized by means of problems. Text-book: H. P. Talbot's "Quantitative Chemical Analysis" (Macmillan).

PROFESSOR EASTMAN *Four credit hours*

C 26 Agricultural Analysis. (Prerequisites: C 11 and 12 and 13 or 15). This course affords opportunity for training in the official methods for the analysis of agricultural materials, such as fertilizers, feeds, and dairy products. Six hours per week of laboratory work.

PROFESSOR EASTMAN *Two credit hours*

C 31 and 32 Industrial Chemistry. These courses consist of three hours per week of lectures and recitations on the more important processes of manufacturing chemistry. A study is made of plant equipment, as well as the chemical principles, used in such industries as the manufacture of acids, alkalies, paper, dyes, textiles, cement, sugar, glass, leather, paints, iron and steel, illuminating gas, organic and inorganic chemicals, etc. Inspection trips are made to manufacturing plants as opportunity offers. These courses will be given to Junior and Senior students together in 1924-1925, and in alternate years thereafter. Text-book: Rogers' "Manual of Industrial Chemistry."

PROFESSOR EASTMAN *Six credit hours*

C 33 and 34 Chemical Calculations. These courses, consisting of two hours of lectures a week, deal chiefly with the principles of stoichiometry. All of the calculations arising in analysis are studied in detail by means of assigned problems to be solved by the student and subsequently to be discussed in class. These courses will be given to the Junior and Senior classes in the year 1923-1924 and in alternate years thereafter.

PROFESSOR PENNY *Four credit hours*

C 35 and 36 **Organic Laboratory.** (Prerequisite: C 21 and 22). This is a laboratory course in organic chemistry of two three-hour laboratory periods per week, throughout the year. Text-book: L. W. Jones' "Laboratory Outline of Organic Chemistry," (Century).

PROFESSOR EASTMAN *Four credit hours*

C 37 **Gas Analysis.** (Prerequisites: C 11 and 12, 21 and 22, 15 and 23). This is a laboratory course with explanatory lectures. It treats of the methods of analyzing flue gases and illuminating gas, of the use of the nitrometer, of the calculations involved and of the application to practice. Three hours a week.

PROFESSOR PENNY *One credit hour*

C 41 and 42 **Physical Chemistry.** These courses of three hours a week consist of lectures with text-book. They treat in an elementary way of the gas laws, thermodynamics, solutions, osmotic pressure, conductivity, ionization, thermochemistry, chemical kinetics, equilibrium, the phase rule, radioactivity, and the like.

PROFESSOR PENNY *Six credit hours*

C 43 **Theoretical Electrochemistry.** This course, given in the first term, consists of lectures and recitations. It treats of the theories bearing on electrochemistry. Faraday's laws, ionic migration, electromotive force, polarization, conductivity of solutions, molten electrolytes, the theory of primary and secondary cells, are the chief topics considered.

PROFESSOR PENNY *Three credit hours*

C 44 **Applied Electrochemistry.** This course, given in the second term, is supplementary to C 43. It consists of lectures and recitations with much practical work in the laboratory. The electrolysis of alkali chlorides, the refining of metals, the production of pigments, electroplating, electroanalysis, electric furnaces, the fixation of atmospheric nitrogen, and similar processes are the chief topics considered. Trips of inspection are made during the year to plants in the vicinity where electrochemical processes are carried on. The course consists of two hours of lectures and recitations and three hours of laboratory weekly.

PROFESSOR PENNY *Three credit hours*

C 45 and 46 Seminar. Required of Seniors in Chemical Engineering; elective for Juniors. The more advanced students of the Chemistry Department meet once a week throughout the year. Oral reports are presented on assigned subjects, such as historical subjects, classical researches, industrial methods and problems, and especially important topics from the current chemical journals. The object is to learn to use the scientific literature, to prepare technical and scientific material for oral presentation, and to present it effectively.

PROFESSOR EASTMAN *Two credit hours*

C 47 Technical Analysis. (Prerequisites: C 11 and 12, 15, 23 and 24). This laboratory course is designed for students in Chemical Engineering and those who specialize in chemistry. It treats of the methods of analysis used in the chemical industries, or specially applied to industrial products and articles of commerce. The methods actually used in control laboratories are largely followed. Among the substances analyzed are acids, alkalies, soaps, oils, fats and waxes, foods, coal, ores, alloys, etc. Twelve hours a week.

ASSOCIATE PROFESSOR TIFFANY *Four credit hours*

C 49 Food Analysis. This is an elective course in the standard methods for the analysis of foods. One three-hour laboratory period per week.

PROFESSOR EASTMAN *One credit hour*

Education

PROFESSOR WILKINSON

Teaching is one of the professions which college graduates enter, either temporarily or permanently, in relatively large numbers. For certification to teach in secondary schools the State Department of Education in Delaware requires (1) that the candidate shall be a graduate of an approved college or university, and (2) that he shall have had, during his college course, a prescribed amount of professional preparation for teaching. Similar requirements now prevail very generally in other states. The primary purpose, therefore, of the courses in Education is to give the students an opportunity to fulfill the requirements for professional training. Although the courses are given with the profession of teaching primarily in mind, much of the work offered has important applications in other

fields and so may be taken with profit by students who have other aims in view.

The Department of Education aims in the second place to render such additional educational service to the State as may be practicable. To this end it seeks to co-operate with other agencies in making such studies, investigations, measurements, etc. as may help to determine and promote the efficiency of public education in Delaware.

Ed 32 Principles of Education. (Prerequisite: Psychology 1 or its equivalent). This is an introductory course in the scientific study of education and aims to acquaint the student with the fundamental principles underlying modern educational theory. It includes a study of the meaning and aims of education and stresses those psychological and sociological principles that have most direct application in the work of the teacher. Open to Juniors and Seniors, and to Sophomores in Agriculture who are specializing in Agricultural Education.

Three credit hours

Ed 41 The Technique of High School Teaching. (Prerequisite: Psychology 1 or its equivalent). This course aims to give the student insight into and some facility in the application of accepted principles and methods of high school instruction and class management. Lesson assignments, questioning, supervising pupils' study, socializing the class period, motivating school work, discipline and student morale, and measuring the results of teaching are some of the topics studied. As often as practicable class discussions are based on observations of actual classroom exercises and special demonstration lessons. Open to Juniors and Seniors.

Three credit hours

Ed 42 Principles of Secondary Education. (Prerequisites: Psychology 1 and Ed 41 or their equivalents). This course begins with a study of the high school pupil, traces briefly the development of secondary education in the United States, compares American ideals with those in certain European countries and examines current tendencies and practices with reference to the aims, organization, and materials of instruction in secondary education. Open to Juniors and Seniors.

Three credit hours

COURSES PRIMARILY FOR GRADUATE STUDENTS

To meet the needs of teachers in service and graduate students who are working for an advanced degree as a preparation for administrative or supervisory work in education, the following courses are offered:

Ed 51 Educational Measurements: Their Administrative Uses.

Three credit hours

Ed 52 Supervision of Instruction.

Three credit hours

Ed 53 Educational Administration: National, State, and Country.

Three credit hours

Ed 54 City School Administration.

Three credit hours

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. BLAIR, AND MR. GRAVES

The courses in the Department of English are designed (1) to enable every student after graduation to express his ideas, orally or in writing, in accurate, clear, effective English; and (2) to give to students through required and elective work an acquaintance with the best authors in English and American Literature and an appreciation of good poetry and prose. All Freshmen are required to take Composition, which involves training in oral and written expression; all Sophomores, a general course in Literature, which treats writers, types, and movements. Seniors in Arts and Science and in Engineering are required to take an additional course in English.

E 1 and 2 Composition. An elementary course which lays special stress on accuracy and clearness in expression. Recitations, themes, practice in public speaking, conferences, and outside readings. Required of all Freshmen. Credit is given only for the full course.

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. BLAIR, AND MR. GRAVES

Six credit hours

E 3 and 4 Types of Literature. A study of selected English poems, first term; a study of the drama, essay, novel, and short-story, second term. Lectures, recitations, and reports. Required of all Sophomores in Engineering and Agriculture.

ASSOCIATE PROFESSOR FOSTER *Four credit hours*

E 5 and 6 Survey of English Literature. A brief survey of the history of the English language and literature, followed by a more detailed and thorough study of the main literary forms—narrative and lyric poetry, the drama, the novel, and the essay. Discussions, lectures, outside readings, reports, and conferences. Required of Sophomores in Arts and Science.

PROFESSOR DUTTON *Six credit hours*

E 7 and 8 Technical English. In this course, students have practice in public speaking, and in the writing of business letters, reports, instructions, orders, specifications and contracts, and general engineering papers. Required of Seniors in Engineering.

PROFESSOR SYPHERD *Two credit hours*

E 9 and 10 Essay and Short-Story. A study of the English essay, with exercises in expository writing, first term; a study of the short-story in English, with exercises in narrative writing, second term. Required of Seniors in Arts and Science.

PROFESSOR SYPHERD *Four credit hours*

E 11 [12] Advanced Composition. An advanced course in narrative and description writing. Themes, outside reading, and conferences. Elective for Sophomores and Juniors in Arts and Science.

MR. GRAVES *Three credit hours*

E 19 [20] Shakspere. The Elizabethan stage; social, political, and literary conditions; a study of selected plays. Elective for Juniors and Seniors.

PROFESSOR SYPHERD *Three credit hours*

E 22 [21]. Modern Drama. Preliminary view of the English drama since Shakspere. Recent and contemporary Euro-

pean drama (Continental plays in translation). Elective for Juniors and Seniors. [Omitted in 1923-1924].

MR. BLAIR *Three credit hours*

E 28 [27] A Literary Study of the Bible. This course is an introduction to the literary study of the English Bible. It involves a general consideration of the contents and the composition, a brief review of the history of the Translations or Versions, a discussion of the literary forms and the literary qualities, and a study of its influence in English Literature.

PROFESSOR SYPHERD *Three credit hours*

E 33 [34] American Literature. A general survey of the field of American literature from Franklin to the present time, and an intensive critical study of the most important work of the chief American poets and prose writers. Lectures, recitations, outside reading, and reports. Elective for Sophomores and Juniors.

PROFESSOR DUTTON *Three credit hours*

E 40 [39] Emerson. A study of Emerson as poet, essayist, and philosopher. Elective for Juniors and Seniors.

PROFESSOR DUTTON *Three credit hours*

E 45 Victorian Poetry. This course is centered about the poems of Browning, Tennyson, Arnold, and Swinburne. The aim of the course is to obtain a knowledge of the poetry of the period, to study the poems as an expression of the philosophy of life of each of the poets, and to correlate this poetry with the social movements of the time. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 46 The Novel. The object of this course is to discuss the principles of novel-writing and to apply these principles in the form of criticism of modern novels. Certain novels of Hardy and Meredith are carefully studied in class. The members of the class make frequent reports on selected modern novels. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

Geology and Mineralogy

PROFESSOR PENNY AND ASSOCIATE PROFESSOR TIFFANY

The courses in Mineralogy and Geology are designed to give an insight into the theoretical side of the subjects but more especially a knowledge of their practical and economic relations. A good collection of mineral and geological specimens is available.

Geol 31 Mineralogy. This course includes a brief study of crystallography and of the more important materials, with some laboratory work in determinative mineralogy. Special attention is given to minerals of economic or industrial value, such as ores. Trips of inspection are made to places in the vicinity where matters of mineralogical interest may be studied.

Two credit hours

Geol 32 Geology. This course consists of lectures and recitations. It treats of dynamic, structural, and historical geology. Particular attention is paid to the economic phases of the subject.

Two credit hours

History and Political Science

PROFESSOR BEVAN, ASSOCIATE PROFESSOR RYDEN, AND MR. BLAIR

The courses in this Department are arranged in the approximate order in which they should be taken by the student. In the first two years certain courses are required; all other courses are elective for properly qualified students. Sophomores may, with permission of the Department, elect certain courses in addition to the required work. Courses 13, 14, 15, and 16 will usually be given in alternate years.

H 1 and 2 Modern European History. A general survey of European History in its social and political aspects from 1500 to the present time. This course is designed for students beginning historical study and affords the basis for advanced work in European History. Text-book, discussion, and collateral readings. Required of Freshmen in Arts and Science.

PROFESSOR BEVAN AND MR. BLAIR *Six credit hours*

H 3 History and Government of Delaware. The aim of

this course is to give a general view of the history of Delaware as a colony and state, and also to outline the main features of its government. Required of Freshmen in Engineering and of Sophomores in Agriculture.

ASSOCIATE PROFESSOR RYDEN *One credit hour*

H 5 History of the United States (1763-1848). An advanced course in American History, embracing study of the Revolutionary period, the formation of the Constitution, foreign relations, early national development, Jacksonian democracy, westward expansion, and the Mexican War. Required of Sophomores in Arts and Science.

ASSOCIATE PROFESSOR RYDEN *Three credit hours*

H 6 History of the United States (since 1848). A continuation of H 5 dealing with the slavery controversy, the Civil War, reconstruction problems, material development, and contemporary history and problems. Required of Sophomores in Arts and Science.

ASSOCIATE PROFESSOR RYDEN *Three credit hours*

H 13 The Renaissance and Reformation. The political background of the period is studied, but special emphasis is laid on social and economic conditions, the developments in art and literature, and the causes and results of the Religious Revolution. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 14 The French Revolution and Napoleon. A special study of the Revolutionary era: the characteristics of the Old Régime, the philosophers and economists, the course of the Revolution, the rise of Napoleon, and the wars of the Empire. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 15 Constitutional History of England. A survey of the historical development of English political and legal institutions. Elective for Juniors and Seniors. [Omitted in 1923-1924].

PROFESSOR BEVAN *Three credit hours*

H 16 History of Greece. A general survey of Greek History to the Roman Conquest. Emphasis is placed upon the

cultural epoch following the Persian Wars and some attention is given to architecture, sculpture, literature, philosophy, and social customs. Elective for Juniors and Seniors. [Omitted in 1923-1924].

PROFESSOR BEVAN *Three credit hours*

H 21 and 22 American Government. A general course dealing with the organization and activities of the American government—both national and state. Stress is placed upon practical problems and present-day developments. Required of Seniors in Agriculture and elective for Juniors and Seniors in Arts and Science.

ASSOCIATE PROFESSOR RYDEN *Six credit hours*

H 27 and 28 Studies in Delaware History. An advanced course which offers opportunity to develop special topics in the social, economic, and political history of the state. The purpose of this course is to afford training in research work. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR RYDEN *Two credit hours*

H 29 and 30 Special Topics: Political Theories and Government. The student is expected to do intensive work in the study of European Government or the History of Political Theories. Open to Seniors only.

PROFESSOR BEVAN *Two credit hours*

H 31 Economic History of the United States. A study of Economic conditions in the United States before the War of 1812, the Industrial Revolution and western movement before the Civil War, and the growth of Industry since the Civil War. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR RYDEN *Three credit hours*

H 32 Diplomatic History of the United States. A survey of the diplomatic relations of the United States from the Treaty of Alliance with France (1778) to the Treaty of Versailles (1919). Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR RYDEN *Three credit hours*

H 33 and 34 Special Topics: American History and Government. A specific course of research work will be assigned students in the fields of American History and Government and

reports required at stated intervals. Elective for Juniors and Seniors.

Associate Professor Ryden *Two credit hours*

Mathematics

Professor Harter, Professor Preston, Assistant Professor T. D. Smith, Assistant Professor Rees, and Assistant Professor Rankin

One year of Mathematics covering Advanced Algebra with a rapid review of the elements, and Trigonometry, Plane and Spherical, is required of all Freshmen except those in the School of Agriculture. All Freshmen in Arts and Science and in Engineering will take M 3 and M 4. Freshmen in Agriculture are required to take a half-year of Mathematics (M 18). A student in engineering who has not offered the entrance requirement in solid Geometry must take M 23, for which no college credit will be given.

Mathematics is fundamental to the various technical courses of the College and is essential to an understanding of the laws of the physical sciences. It is becoming of increasingly wider use in the expression and interpretation of the financial and industrial relations of modern social and economic life. The following courses are intended to fit the student to apply the mathematical method to his scientific studies and to enable him to follow formulated expressions of the relationship between parts in a chain of reasoning.

M 3 **College Algebra,** including a review of the elements, and Trigonometry. Required of Freshmen in Arts and Science, and in Engineering.

Four credit hours

M 4 **Advanced Algebra and Trigonometry, Plane and Spherical.** (Prerequisite: M 3). Required of Freshmen in Arts and Science, and in Engineering.

Four credit hours

M 5 **Analytic Geometry,** covering conic sections, higher plane curves, and elements of geometry of space. (Prerequisite: M 4). Required of Sophomores in Engineering. Open to students in the Arts and Science Course who have the necessary preparation.

Four credit hours

M 6 Differential and Integral Calculus. (Prerequisite: M 5). Includes a working knowledge of Differential and Integral Calculus, forming a basis to the application to Mechanics. Required of Sophomores in Engineering. Open to Arts and Science students who have the necessary preparation.

Four credit hours

M 9 and 10 General Astronomy. A course in descriptive Astronomy giving an orderly statement of astronomical facts and principles. Exercises in spherical and practical Astronomy. Elective.

Six credit hours

M 11 Theoretical Mechanics. (Prerequisite: M 6). This course covers the applications of calculus to the solution of practical problems in Mechanics and the fundamentals of Theoretical Mechanics. Required of Juniors in Engineering.

Four credit hours

M 12 Theoretical Mechanics. (Prerequisite: M 11). Required of Juniors in Engineering.

Four credit hours

M 13 Method of Least Squares. The theory of errors of observations.

Three credit hours

M 14 Theory of Functions.

Three credit hours

M 18 Applied Mathematics in Agriculture. A rapid review of elementary Mathematics with sufficient advanced material, selected to solve the mathematical problems of the student of Agriculture. The volume of silos, in Mensuration; simple problems of farm surveying, in Trigonometry; milk production curves, in Graphs; fertilizer and cement mixtures, in Averages and Mixtures; percentage, profit and loss, compound interest, annuities, depreciation and farm loans, in the Theory of Investment are type problems to be studied. Required of Freshmen in Agriculture.

Two credit hours

M 23 Solid Geometry. For all Freshmen in Engineering who have not offered Solid Geometry for entrance. Two hours a week, for which no college credit will be given.

Military Science and Tactics

PROFESSOR, MAJOR LATHE B. ROW, U. S. A.; ASSOCIATE PROFESSOR, CAPTAIN ROY SPARKS, U. S. A.; ASSOCIATE PROFESSOR, CAPTAIN WILLIAM P. MORSE, U. S. A.

A Senior Unit of the Reserve Officers Training Corps has been established at the University of Delaware. The course of instruction is compulsory for members of the Freshmen and Sophomore classes. Three hours of military instruction a week are required of members of the Junior and Senior classes. The advanced course of the R. O. T. C., requiring five hours a week of instruction, is optional for Juniors and Seniors who have successfully completed the Freshman and Sophomore Courses. Each student of the Advanced Course is entitled to receive from the government the value of the government ration each day of the period from enrollment to date of graduation, excepting six weeks (Period of the Advanced Course Camp). Members of the Advanced Course are required to attend one R. O. T. C. Camp of six weeks duration, normally during the summer following the Junior school year. Each student attending the Advanced Course R. O. T. C. Camp is entitled to adequate funds (five cents per mile) for travel to and from camp, uniform, equipment, and special increased subsistence while at camp, and seventy cents a day for the actual period of attendance. The total amount received in cash by Advanced Course students, above all necessary expenses, is approximately two hundred and fifty dollars ($250.00). Qualified graduates of the Advanced Course will be offered commissions in the Officers Reserve Corps, United States Army.

Mil 1 and 2 Freshman Course. I. General Instructions: (a) Military Courtesy and Customs of the Service; (b) Individual Infantry Equipment; (c) Interior Guard Duty; (d) Signalling.

II. Physical Training: (a) Setting up exercises; (b) Mass games and mass athletics.

III. Infantry Drill (Theoretical and Practical): (a) Close and extended order; (b) Ceremonies.

IV. Scouting and Patrolling: (a) Duties and conduct of patrols; (b) Practical Problems.

V. Rifle Marksmanship: (a) Theoretical Instructions; (b) Indoor Rifle practice; (c) Outdoor range practice (optional).

Three credit hours

Mil 3 and 4 Sophomore Course. I. Military Sketching and Map Reading: (a) Map Reading; (b) Military Sketching; (c) Problems in Map Reading.

II. Physical Training: (a) Setting up exercises; (b) Mass games and mass athletics.

III. Infantry Drill: (a) Fundamentals of leadership; (b) Close and extended order; (c) Combat.

IV. Infantry Weapons and Equipments: (a) Automatic Rifle; (b) The Bayonet; (c) Hand and Rifle Grenades.

V. Musketry: (a) Principles of Musketry; (b) Range estimation; (c) Target designation; (d) Fire distribution; (e) Communication, signals, and transmission of fire data; (f) Conduct of fire, to include the functions of the platoon commander with so much of the functions of a company commander as may be necessary for an intelligent understanding.

VI. Military Hygiene, Sanitation, and First Aid.

Three credit hours

Mil 5 and 6 Junior Course. I. Field Engineering: Instruction to include the methods of military field engineering in all types of trenches and obstacles. Organization of working parties and tasks. Selection of location for trenches. Concealment and camouflage.

II. Physical Training: (a) Setting up exercises; (b) Mass games and mass athletics.

III. Infantry Drill: (a) Close and extended order; (b) Combat.

IV. Infantry Weapons: (a) Machine guns; (b) Trench mortars; (c) 37 M/M gun.

V. Military Law and Rules of Land Warfare.

Five credit hours

Mil 7 and 8 Senior Course. 1. Military History and Policy of the United States: (a) Important campaigns and battles in the history of the United States and tactical deduc-

tions therefrom; (b) History of the Military policy of the United States, including the period of the World War; (c) Economic history of the United States in relation to our military policy.

II. Physical Training: (a) Setting up exercises; (b) Mass games and mass athletics.

III. Infantry Drill: (a) Close and extended order; (b) Combat.

IV. Minor Tactics: (a) Offensive and defensive conduct of small units; (b) Duties of leaders; (c) Combat and Reconnaissance; (d) Orders; (e) Deployment; (f) Advancing the Attack; (g) The Assault; (h) Position warfare; (i) Approach marches; (j) Organization of the ground; (k) The Company in support, in reserve, and acting alone; (l) Machine guns; (m) One-pounded and light mortars; (n) Ammunition supply.

V. Pistol Marksmanship.

Five credit hours

Modern Languages and Literatures

PROFESSOR E. L. SMITH*, ASSISTANT PROFESSOR SALESKI, ASSISTANT PROFESSOR BRINTON, ASSISTANT PROFESSOR KIRKBRIDE†, AND ASSISTANT PROFESSOR LEVINE

The aim of the courses offered in Modern Languages is to provide elementary and intermediate instruction in German, French, and Spanish. Students who have completed commendably the courses offered in these languages may expect to possess a good pronunciation, an accurate reading knowledge of the language, and an acquaintance with the more important authors and some familiarity with literary groups and movements. An effort is made to acquaint the student with the several European civilizations from the linguistic and literary point of view.

FRENCH

ML 1 and 2 Beginning French. For Freshmen who may elect French to satisfy their required work in Modern Lan-

*Deceased, January, 1923.
† On leave of absence.

guages. This course is a required course for students whose entrance preparation in French has been found to be deficient (see page 25). Upon satisfactory completion of this course students are prepared to enter ML 3 and 4.

Six credit hours

ML 3 and 4 Intermediate French. This course is designed to meet the needs of Freshmen who have satisfactorily passed the departmental entrance test in French. A rapid but thorough review of French grammar. French composition is continued throughout the course by means of themes, reports, letter-writing, etc. Aural and phonetic training. After the grammar review has been completed, one period a week is devoted to the rapid reading of French texts, newspapers, etc., which are used as a basis for vocabulary building.

Six credit hours

ML 5 and 6 Advanced French. Continuation of the work of ML 3 and 4 (Prerequisite: ML 3 and 4 or their equivalent). Formal composition. Outline of history of French literature with illustrative reading. Aural training and definite emancipation from dictionary are two primary aims of this course.

Six credit hours

ML 7 Continuation of ML 5 and 6. First semester of Junior year. Elective for students who have completed ML 5 and 6 or equivalents. Aim is a wider reading knowledge and further vocabulary building. Texts chosen to form introduction to work in literature courses. Conducted entirely in French.

Three credit hours

ML 8 Literature. Second half of Junior year. Elective for students who have completed ML 7. French Literature from 1600 to Chateaubriand. French classic drama—Corneille, Racine and Molière. Voltaire, Diderot, and Rousseau. Readings in literary history and criticism.

Three credit hours

ML 9 and 10 Nineteenth Century Literature. From the Romantics to the reaction against Naturalism. Drama, poetry, and the novel. The latter part of the course will treat contemporary writers and tendencies.

Six credit hours

SPANISH

ML 21 and 22 Elementary Spanish. Stress is laid on accurate pronunciation, mastery of elements of grammar, and the acquisition of vocabulary. Oral and written exercises. Reading of easy modern Spanish prose. Composition and conversation. Hills and Ford, Spanish Grammar. DeVitis, Spanish Reader. Crawford, Spanish Composition. Gil Blas.

Six credit hours

ML 23 and 24 Advanced Spanish. Attention will be given to both practical and literary ends. Conversation and composition in Spanish throughout the year. Humphrey's Spanish Prose Composition. During the first half of the year representative plays and novels from the nineteenth century will be read and studied. During the second half either Cervantes' Don Quixote or the dramas of Lope de Vega and Calderon will be studied. Lectures, readings, and reports.

Six credit hours

GERMAN

ML 61 and 62 First Reading Course. The aim of this course is to provide the student with an elementary reading knowledge of the language. Lutz, Elementary German Reader; Bernhardt, Deutsche Literaturgeschichte. No credit is given for less than the full course.

Six credit hours

ML 63 and 64 Second Reading Course. The purpose of this course is to help the student attain ease and accuracy in the reading of more difficult German. Bender's German Short Stories, von Klenze's Deutsche Gedichte, and Greenfield's Technical and Scientific German have been read. No credit is given for less than the full course.

Six credit hours

ML 65 Language Course. (This course is prerequisite to all courses above 70). Grammar, composition, conversation.

Three credit hours

ML 67 and 68 Reading in Special Subjects. (Prerequisite: ML 64). The purpose of this course is to assist stu-

dents specializing in other fields to avail themselves of the material published in German. Accordingly, history, chemistry, literature, or whatever subjects constitute the field of special study of the individual students, will be taken up.

Six credit hours

ML 69 and 70 Individual Assistance in Special Fields. The purpose of this course is to assist students in their individual investigations in other subjects in so far as the material may be in German. Credit will be determined in the case of each student separately according to the amount and nature of his work.

ML 71 and 73 Goethe. (Prerequisite: ML 65.) Conducted mainly in German. [In 1923-1924 ML 73 will be omitted.]

Each, three credit hours

ML 72 Lessing. (Prerequisite: ML 65.) [Omitted in 1924-1925 and 1925-1926.]

Three credit hours

ML 74 Schiller. (Prerequisite: ML 65.) Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925.]

Three credit hours

ML 76 The German Drama since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1925-1926.]

Three credit hours

ML 78 German Prose since Goethe. (Prerequisite: ML 65) Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925.]

Three credit hours

ML 80 German Lyric Poetry since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1925-1926.]

Three credit hours

Philosophy and Social Science

PROFESSOR CROOKS

This Department, as now organized, offers introductory courses in the fields of Philosophy, Psychology, and Sociology.

The purpose of these courses is, first, to give the student a working knowledge of the principles underlying these subjects, together with some historical background, and, second, to illustrate these principles by their application to certain fields of practical human interest.

Psy 1 Introductory Course. A survey course designed to give the student a general view of the important aspects of mental life and their relation to human behavior. Open to Sophomores, Juniors, and Seniors.

Three credit hours

Psy 2 Applied Psychology. (Prerequisite: Psy 1 or its equivalent). A more intensive study of certain psychological problems, making use of the experimental method of investigation and emphasizing the applications of the facts learned. Open to Sophomores, Juniors, and Seniors.

Three credit hours

Phil 1 Introduction to Philosophy. The method of giving this course will be by a brief historical survey of the development of Philosophy, followed by a more detailed consideration of its major problems. Open to Juniors and Seniors.

Three credit hours

Phil 2 Ethics. This course will consider first the origin of customs, this being followed by a study of the types of theory concerning the moral standard. Emphasis will be put on the social applications of moral principles. Open to Juniors and Seniors.

Three credit hours

Phil 3 Logic. A study of elementary Logic, deductive and inductive, especial attention being given to the methods of science. A brief review of the modern developments of logical theory will be made at the end of the course. Open to Juniors and Seniors. [Omitted in 1923-1924.]

Three credit hours

Phil 4 Contemporary Philosophy. (Prerequisite: Phil 1 or its equivalent.) A study of the main philosophical tendencies of the present, such as the new Materialism, New Realism, Prag-

matism, and Idealism. Open to Juniors and Seniors. [Omitted in 1923-1924.]

Three credit hours

Soc 1 Introduction to the Study of Society. A survey of social origins, forces, laws, and aims, with the purpose of laying the foundation for the scientific study of practical social problems.

Three credit hours

Soc 2 Practical Sociology. A course dealing primarily with certain pathological conditions, their causes, significance to society, and possible means of improvement. Some of the problems considered are: poverty, crime, public health, dependents and defectives, child labor.

Three credit hours

Physics

PROFESSOR HANCOCK

Two distinct series of courses in physics are offered to undergraduates. They differ in the requirements for admission and in the thoroughness of the work.

The first series (1,2,3,4) is designed for those desiring to study physics mainly from a philosophical point of view in its relation to other sciences and to natural phenomena. It is open to students in the School of Arts and Science who have obtained Sophomore standing.

The second series (5,6,7,8) is designed especially for Engineering students; therefore more stress is placed on the mathematical work. These courses are required of all Sophomores in Engineering, but are open to all students offering the required prerequisites.

Ps 1 General Physics. Mechanics and Heat. (Prerequisite: High School Physics or M 3 and 4). This course consists of the fundamental principles of the science and a study of the Mechanics of Solids, Liquids and Gases, and of Heat. Lectures and recitations. Three hours per week. Elective for students in the School of Arts and Science.

Three credit hours

Ps. 2 General Physics. Electricity and Magnetism, Sound

and Light. A continuation of Ps 1. Lectures and recitations. Three hours per week.

Three credit hours

Ps 3 Physical Laboratory. (Must be accompanied or preceded by Ps 1). Introduction to instruments and Physical Laboratory methods. Experiments in Mechanics of Solids, Liquids and Gases, and Heat. One three-hour period a week.

One and one-half credit hours

Ps. 4 Physical Laboratory. (Must be accompanied or preceded by Ps. 2). A continuation of Ps. 3. Experiments in Electricity and Magnetism, Sound and Light. One three-hour period a week.

One and one-half credit hours

Ps 5 Engineering Physics. (Prerequisites: M 3 and 4.) A thorough course in the fundamentals of Physics from an Engineering standpoint, including the solution of problems on Mechanics and Heat. Lectures and recitations. Five hours per week.

Five credit hours

Ps 6 Engineering Physics. A continuation of Ps 5. Lectures, recitations, and problems on Electricity and Magnetism, Sound and Light. Five hours a week.

Five credit hours

Ps 7 Physical Laboratory. (Must be accompanied or preceded by Ps 5). Introduction to Laboratory methods. Experiments in mechanics of solids, liquids and gases, thermometry, calorimetry and thermodynamics. One three-hour period a week.

One and one-half credit hours

Ps 8 Physical Laboratory. (Given in connection with Ps. 6). A continuation of Ps 7. Experiments in Electricity, Magnetism, Sound and Light. One three-hour period a week.

One and one-half credit hours

Ps 10 Advanced Physics. A second course in Physics offered to properly qualified students in any department. Lectures, recitations, problems and laboratory work on the Molecular Physics of Heat and Electricity.

Three and one-half credit hours

Ps 11 Agricultural Physics. A course in the fundamentals of Mechanics, Heat, and Electricity, especially their application to farm problems. Required of all Sophomore students in Agriculture. Lectures, recitations, and problems. Three hours per week.

Three credit hours

Ps 13 Physical Laboratory. A laboratory course designed to accompany Ps 11. One three-hour period a week.

One and one-half credit hours

SCHOOL OF AGRICULTURE

SCOPE OF THE WORK

The course in the School of Agriculture combines a technical course in Agriculture with as much cultural training as possible. Agriculture is viewed as applied science and the course is planned to give the student a broad foundation in the fundamental sciences which underlie modern agricultural practice.

The aim of the course is so to train and develop men that they may become leaders in the great field of Agriculture, and thus become a valuable asset in the life of the state and the nation.

REQUIREMENTS FOR GRADUATION

Candidates for graduation are required to complete 138 credit term-hours of work in addition to Military Science.* All Agricultural students will be required to spend at least six months, or their equivalent, before the Senior year, in practice work on a farm. All candidates for a degree in Agriculture must pass an examination in farm practice before December 1 of the Senior year.

Candidates for a degree in Agriculture must at the beginning of the second term of the Junior year register with the Dean of Agriculture as students majoring in Agronomy, Animal Husbandry, Horticulture, or Agricultural Education. A minimum of 25 credit term-hours must be taken in the department in which the student is majoring, except in Agricultural Education, where 18 credits are required. The student

*Beginning with the class of 1926, all students will be required to take three hours per week in Physical Education.

should consult with the head of the department in which he is taking his major work, regarding his selection of elective subjects during his Junior and Senior years.

Except by special permission from the Dean of Agriculture, Sophomores, Juniors, and Seniors will not be allowed to take in any one term more than 20 credit hours, and Freshmen not more than 18 credit hours, exclusive of Military Science.

In addition to fulfilling these specific requirements, candidates for graduation must obtain sixty honor points, to be estimated on the basis of two points for the grade of A in a one-credit-hour course, and one point for the grade of B in a one-credit-hour course.

PRESCRIBED STUDIES

	Credits
English 1, 2, 3, and 4	10
Biology 1, 2, 7, and 8	12
Chemistry 11, 12, 13, 14, 21, 22, and 26	15
History 3, and 21	4
Business 1	3
Bacteriology 1 and 2	6
Physics 1 and 3	4.5
Plant Pathology 2; or Hygiene 2	3
Farm Management Agri. 6	3
Genetics, Hort. 33	3
Agronomy 1, 4, and 5	11
Animal Industry 17, 18, and 19	9
Horticulture 16, 17, and 18	9
Seminars	2
Agricultural Education 2	2
Mathematics 18	2

Elective Studies

Agricultural Subjects	16
Free Electives	23.5
Total	138

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN AGRONOMY

	1st Term	*2d Term*
Agronomy 2		2 hr.
Agronomy 3	2 hr.	
Agronomy 7	2 hr.	
Agronomy 8		2 hr.
Agronomy 10		3 hr.
Agronomy 11 or 12	2 hr.	or 2 hr.
Agronomy 13 and 14	1-3 hr.	1-3 hr.
Plant Pathology 2		3 hr.
Soil Bacteriology 2		3 hr.
Biology 9 and 10	2 hr.	2 hr.
Modern Language 1 and 2, or 3 and 4	3 hr.	3 hr.
History 22		3 hr.
Education 32		3 hr.
Psychology 1	3 hr.	

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN ANIMAL INDUSTRY

	1st Term	*2d Term*
Agronomy 2		2
Agronomy 10		3
Animal Industry 21	3	
Animal Industry 22	2	
Animal Industry 23	3	
Animal Industry 24		3
Animal Industry 25	1	
Animal Industry 27	1	
Animal Industry 28		3
Animal Industry 30		1
Animal Industry 34		2
Bacteriology 3	3	
Biology 9 and 10	2	2
Hygiene 2		3
Physiology 1 and 2	3	3

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN AGRICULTURAL EDUCATION

	1st Term	*2d Term*
Agronomy 2		2
Agronomy 9	3	
Animal Industry 21	3	
Animal Industry 23	3	
Animal Industry 34		2
Biology 5 and 6	2	2
Education 42		3
Horticulture 20		3
Horticulture 23	3	
Horticulture 25 or 26	3	
Plant Pathology 2 or Hygiene 2	3	

SUGGESTED LIST OF ELECTIVES FOR STUDENTS MAJORING IN HORTICULTURE

	1st Term	*2d Term*
Agronomy 9	3	
Biology 5 and 6	2	2
Biology 9 and 10	3	3
Geology 32		2
History 22		3
Horticulture 19	3	
Horticulture 20		3
Horticulture 21	3	
Horticulture 23	3	
Horticulture 24		3
Horticulture 25 or 26	3	3
Horticulture 29	3	
M L 1 and 2 or M L 3 and 4	3	3
Plant Pathology 2		3
Soil Bacteriology 2	3	

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Biology, 7	5	3	Biology, 8	5	3
Chemistry, 11	2	2	Chemistry, 12	2	2
Chemistry, 13	3	1	Chemistry, 14	3	1
Agronomy, 1	6	4	Horticulture, 16	4	3
Animal Industry, 17	4	3	Animal Industry, 18	4	3
	23	16	Mathematics, 18	2	2
Military Science, 1	3	1.5		23	17
	26	17.5	Military	3	1.5
				26	18.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
History, 3	1	1	Chemistry, 22	3	3
Chemistry, 21	3	3	Chemistry, 26	7	3
Physics, 1, 3	6	4.5	Agronomy, 4	6	4
Horticulture, 17	4	3	Horticulture, 18	4	3
Animal Industry, 19	4	3	Elective	4	3
Elective	3	3		26	18
	23	19.5	Military, 4	3	1.5
Military, 3	3	1.5		29	19.5
	26	21.0			

JUNIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
Business, 1	3	3	Agricultural Education, 2	3	3
Bacteriology, 1	5	3	Bacteriology, 2	5	3
Horticulture, 33	3	3	Plant Pathology, 2 or Hygiene, 2	5	3
Biology, 1	5	3	Biology, 2	5	3
Agronomy, 5	5	3	Elective	6	6
Elective	5	3		24	18
	24	18	Military, 6	3	1.5
Military	3	1.5		27	19.5
	27	19.5			

SENIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
History, 21	3	3	Agronomy, 6	5	3
Seminar	2	1	Seminar	2	1
Elective	14	14	Elective	14	14
	19	18		21	18
Military, 7	3	1.5		3	1.5
	22	19.5		24	19.5

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Agronomy

PROFESSOR SCHUSTER AND ASSISTANT PROFESSOR RUNK

Agronomy is the science of the soil and what it produces. The soil is studied with reference to its influence upon plant growth. The fundamental principles of soil management for crop production are especially emphasized. The study of soils presupposes a fair understanding of the principles of physics, chemistry, and biology. The courses in soils are designed to equip the future farmer with a complete knowledge of his soil, and also to give adequate training to students who desire to specialize in soils.

Field crops, the products of the soil, are studied from the standpoint of adaptation and improvement. The study of Field Crops presupposes a general knowledge of Botany. A special attempt is made to adapt the work to the young man who wishes to apply scientific principles of field crop culture and improvement on the farm.

The aim of the farm management courses is to assist the student to perceive the just relationship of the several factors of production and distribution as applicable to local conditions, and to develop in him executive and administrative capacity.

Students who major in the Department of Agronomy should be well fitted for general farming, investigational work in the Experimental Stations, and County Agricultural Agent work.

The Department of Agronomy has large well-lighted laboratories in Wolf Hall for use in the study of crops and soils, as well as ample greenhouse space. Thirty acres of the Experimental farm are devoted to experimental and research work in Agronomy and the results are used to supplement class and laboratory work. Students in Farm Management are required to visit farms of each of the leading types in the State, viz: Dairying, Horticulture, and General Farming.

Agr 1 Field Crops. A general introductory course dealing with the culture and marketing of field crops. Attention is

given to the judging of corn, wheat, and oats, accompanied by a study of market classes and grades. Various types and varieties of grasses and leguminous crops that are used for hay and pasture are discussed. Required of all Freshmen in Agriculture. Three lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Four credit hours*

Agr 2 Cereals. (Prerequisites: Agr 1, B 7 and 8). An advanced course in cereal crop production, elective for Juniors and Seniors. One lecture and two laboratory hours.

ASSISTANT PROFESSOR RUNK *Two credit hours*

Agr 3 Forage Crops. (Prerequisites: Agr 1, B 7 and 8). An advanced course in forage crop production, elective for Juniors and Seniors. One lecture and two laboratory hours.

ASSISTANT PROFESSOR RUNK *Two credit hours*

Agr 4 Elementary Soils. (Prerequisites: Chem 11, 12, 13, 14, 21 and 23; Ps 1 and 3). A study of the origin, formation, classification, function of soils, and relation to plant life. The question of soil management in relation to tillage, drainage, and fertility is taken up. Required of Sophomores in Agriculture. Three lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Four credit hours*

Agr 5 Soil Fertility. (Prerequisites: C 22, 26; Agr 4). A further study of the principles developed in Agronomy 4. The ultimate effect of various rotations and different systems of farming on the fertility of the soil is studied and attention is also given to the conditions of Delaware. Likewise study is made of the use of manures, fertilizers, and amendments with a comparison of their agricultural and commercial value for different crops. Required of Juniors in Agriculture. Two lectures and three laboratory hours.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 6 Farm Management. This course is designed to summarize the student's agricultural training and experience and apply it to the efficient management of the farm as a whole. The organization of the farm as a business enterprise, its arrangement with reference to size and shape of field; systems of crop and livestock management; the relation of fixed

to circulating capital; the relation of labor to income; farm accounts, etc. Required of all Seniors in Agriculture. Two lectures and three laboratory hours.

PROFESSOR SCHUSTER *Three credit hours*

Agr 7 Advanced Soils. (Prerequisites: C 26, Agr 5). A study of soil classification covering character, extent, etc., of provinces, series, and types in the United States. A field study of the methods of mapping soils and practice in soil mapping is given. The effect upon crops of different fertilizers added to the soils that are mapped is determined by pot experiments. Assigned readings are made. Elective for Seniors in Agriculture. One lecture and one four-hour laboratory period.

PROFESSOR SCHUSTER *Two credit hours*

Agr 8 or 9 Plant Breeding. (Prerequisites: Agr. 1, 2, 4, Hort 33). The improvement and breeding of field crops including the grains, grasses, and legumes; selection; results obtained by various investigators. Lectures, assigned reading, demonstrations, and laboratory work. Elective for Juniors and Seniors in Agriculture. One lecture and two laboratory hours.

Two credit hours

Agr 10 Farm Equipment. This course takes up a study of the design, construction, and cost of farm buildings; the adaptability, efficiency, construction, operation, and durability of farm machinery—motors, gasoline engines, and tractors; sewage disposal, water supply, and lighting systems. Elective for Juniors and Seniors in Agriculture. Two lectures and one three-hour laboratory period.

ASSISTANT PROFESSOR RUNK *Three credit hours*

Agr 11 or 12 Methods of Field Experimentation. (Prerequisites: Agr 1, 2, 4, 5, 7 and 8). A course designed for students intending to take up Experiment Station work. Methods of plotting land for soil and crop experiments; check systems; interpretation of results. The literature of this and other countries pertaining to experimental work will be carefully studied. Elective for Seniors in Agriculture. One lecture and two laboratory hours.

Two credit hours

Agr 13 and 14 Thesis and Seminar. Original work on an approved subject of investigation. Required of all Seniors who Major in Agronomy. Credit hours adjusted to time given to work.

Agricultural Education

PROFESSOR HEIM

The department of Agricultural Education has as its aim the preparation of high school teachers of Agriculture under the Smith Hughes Act of 1917, and is supported by Federal appropriations supplemented by State appropriations.

The courses are arranged in accordance with certain requirements set up by the State Board for Vocational Education and approved by the Federal Board for Vocational Education. Students completing the courses are entitled to be certified for teaching vocational agriculture in any secondary school.

The classroom and laboratory instruction is supplemented by observation and practice teaching in state and federally aided approved schools of the State. Several visits to vocational schools of adjoining States will also be required during the Senior year.

A student preparing for vocational teaching will be required to take all the courses offered by this department and have at least two years of practical farm experience.

AE 1 Vocational Education. (Prerequisites: Psy 1 and Ed 32). This is a general survey course designed to acquaint prospective high school teachers of Agriculture with the fundamental principles underlying modern educational theory with respect to Vocational Education. The study begins with the history and development of Vocational Education from the early middle ages down to the present time, treating fully such topics as the Relation of Vocational Education to General Education; Social aspects of Vocational Education; Practical Arts in General Education; Principles of Method; etc. Open only to Juniors in Agriculture. Three recitation hours.

Three credit hours per week

AE 2 Rural Sociology. (Prerequisite: for students specializing in agricultural education, AE 1). This course contemplates a study of rural social conditions with especial reference to physical and occupational environment; Rural and urban

increase; Rural health, recreation, and sanitation; Community meetings; Socialization of country life; Rural social institutions and their improvement; The school and the church and their relation to the community; The grange and other organizations; Rural surveys and many other social agencies through which changes may be effected. Required of Juniors in Agriculture. Three recitation hours.

Three credit hours per week

AE 3 Methods of Teaching Vocational Agriculture. (Prerequisites: AE 1 and 2.) The application of the principles of education to the problems of vocational teaching and practice. Among the topics considered are a study of the selection and arrangement of subject matter, methods of presentation, class management, equipment and illustrative material adapted to the teaching of the different phases of agriculture, preparation of home project outlines and plans, project supervision, community activities, etc.

The laboratory period will be used for the preparation of teaching material and for working out individual assignments connected with the course. Open to Seniors in Agriculture. Two recitation hours, two laboratory hours per week.

Three credit hours per week

AE 4 Observation and Practice Teaching. (Prerequisites: AE 1, 2, and 3). This course is a continuation of AE 3 and has for its object to give students a knowledge of the best educational practices with respect to methods of teaching agriculture in secondary schools and to offer some opportunity to put those methods into practice. It emphasizes particularly the preparation of lesson plans and project outlines, collection of illustrative material and the keeping of records and reports, etc. Open to Seniors in Agriculture. Five recitations or laboratory hours per week.

Two or three credit hours per week

AE 5 Seminar. In order to keep abreast of the times, a weekly conference is held to study present-day literature dealing with Vocational Education and current events of vocational interest. Outside speakers are called in to assist in the discussion from time to time. Students enrolling for credit will

select special subjects for study and will report progress from time to time. Open to Seniors in Agriculture. One conference hour per week.

One credit hour per week

Animal Industry

PROFESSOR PALMER, PROFESSOR T. A. BAKER, MR. TOMHAVE, AND MR. H. R. BAKER

The courses in the Department of Animal Industry are designed to familiarize the student with the fundamental principles underlying animal production and to associate these principles with modern practice. In all of the general courses special emphasis is laid on the economic aspects of this important industry and an attempt is made to show the student the place of Animal Industry in the general farm scheme of the South Atlantic States. Instruction in the classroom and laboratory is supplemented by work with the live stock on the University Farm and by visits to many flocks, herds, and studs of Delaware and Pennsylvania. The University maintains a herd of about fifty head of dairy cattle, which is available for practice in judging and herd management. Fine specimens of various breeds of horses, sheep, and swine are also owned by the University. An effort is being made to secure vacation employment for all students specializing in this department, as practical work under actual farm conditions is considered an essential part of the training.

AI 17 Types and Market Classes of Farm Animals. A study of the development of the types of horses and hogs, and of the characteristics of the breeds within the types. The market classes are discussed in detail and lantern slide lectures are given to illustrate both types and market classes. Laboratory practice in judging is conducted regularly at the University Farm. The selection of desirable breeding stock is given especial attention. Required of Freshmen in Agriculture. Two lectures and two laboratory hours per week.

Three credit hours

AI 18 Types and Market Classes of Farm Animals. (Prerequisite: AI 17). A continuation of AI 17 embodying the study of types, breeds, and market classes of cattle and sheep. This course includes a two-day trip through northern Delaware and southeastern Pennsylvania for the purpose of visiting several

well-known breeding establishments. Required of Freshmen in Agriculture. Two lectures and two laboratory hours per week.

AI 19 Animal Nutrition. (Prerequisites: C 11, 12, 13, 14, 21, 23). The objects of this course are threefold: (1) To teach the fundamental principles underlying the practice in feeding farm animals; (2) to teach as much as possible concerning the source, composition, and usefulness of the feeds commonly used in this country; (3) to teach the practice of feeding itself, so far as practice can be taught in lecture and laboratory with occasional visits to the barns.

A great many problems are given the students to solve and reports on assigned readings are required weekly—a very fundamental course for successful farm operations. Required of Sophomores in Agriculture. Two lectures and two laboratory hours per week.

Three credit hours

COURSES REQUIRED OF STUDENTS SPECIALIZING IN ANIMAL INDUSTRY

AI 20 Animal Hygiene and Pathology. A study of the methods of preserving the health of farm animals, including the chief sporadic and infectious diseases of live stock, their symptoms, diagnosis, and means of control. It is recommended that students taking this course should have completed the courses in General Physiology and Bacteriology. Required of Juniors in Agriculture.

Three credit hours

AI 22 Advanced Judging. (Prerequisites: AI 17 and 18). This course is a continuation of the judging work given in connection with AI 17 and 18. It is the aim of the course to give the student an intense drill in judging so that he may be qualified for professional work at fairs. Men representing the college in judging contests will be chosen from this class. The very best class of material will be selected for the student to work with and many excellent stock farms within a radius of fifty miles will be visited. Lectures and criticism will be given

in connection with the practicums. Four laboratory hours per week. Junior year.

Two credit hours

AI 24 Animal Breeding. (Prerequisites: AI 17, 18; Ps 1, 3; Hort 33; B 1, 2). This course presupposes a knowledge of the foundation principles and the various theories of heredity as represented in the course in Genetics (Hort 33). It will be the aim of this series of lectures to correlate these principles and theories with the established practices of breeding farm animals. The various systems of breeding, including grading, cross breeding, line breeding, and in-breeding, will be considered in detail. A considerable portion of the course will be devoted to the physiology of reproduction and the causes of sterility. Three lectures per week. Junior year.

Three credit hours

AI 25 Advanced Animal Nutrition. (Prerequisites: AI 17, 18, 19; C 11, 12, 13, 14, 21, 23). The aim of this course is to give the student a thorough study of the chemistry of the feeding problem. All of the recent literature dealing with the specific effects of amino acids upon the maintenance and growth of animals will be reviewed. The vitamine theory and the requirements of animals for mineral compounds will be discussed. It is intended that by taking this course the student may be enabled to read intelligently the current scientific periodicals which pertain to this important science. One lecture per week. Senior year.

One credit hour

AI 27 Senior Seminar. A weekly conference with Senior students in Animal Industry. Reviews of current literature and recent experimental work will be made by each student and this material will be discussed at the lecture hour. Each student is required to prepare a term paper covering in detail some phase of research work. Senior year.

One credit hour

AI 28 Pedigree Study. (Prerequisites: AI 17, 18, and 24). A series of lectures will be given covering the general history of breeding, types of pedigrees, and all of the fundamental ques-

tions relating to the determination of animal values, based upon their ancestry. Practice in the compilation of extended pedigrees will be given in connection with the laboratory work. The Agricultural library includes a large collection of herd, stud, and flock books which are available for student use. Two lecture and two laboratory hours per week. Senior year.

Three credit hours

AI 30 Senior Seminar. A continuation of AI 27.

One credit hour

ELECTIVE SUBJECTS

AI 21 Dairy Technology. Due to the fact that there are very small amounts of milk products manufactured in Delaware, there is no demand for specialized courses in this subject. This course covers in a general manner the analysis of all dairy products, special tests for adulteration, methods of preparing starter, and the manufacture of soft cheese. Practice will also be given in the adjustment and operation of cream separators. An inspection trip will be made to some of the creameries and milk distributing plants in the vicinity of Wilmington. Two lectures and two laboratory hours per week. Open to all students.

Three credit hours

AI 23 Dairy Cattle Management. (Prerequisites: AI 17, 18, 19). This is a very practical course including the fundamental principles of dairy farm husbandry. The lectures include questions of feeding, breeding, management, sales, advanced registry testing, methods of successful practice, cost of milk production, etc. Barn plans, methods of record keeping, registration, and the scoring of barns and milk houses are considered in the laboratory periods. Practical work is also given the student in stable management and in the operation of milking machines. Two lectures and two laboratory hours per week. Junior year.

Three credit hours

AI 29 Poultry Hygiene. This course deals with the modern methods in the hygienic management of the poultry plant. It includes a study of the common diseases of poultry, sanitary

construction of building and yards, and the feeding, selection, and management of breeding flocks. Two lectures and two laboratory hours per week. Open to all students.

Three credit hours

AI 32 **Thesis.** Senior year.

AI 34 **Horse, Swine, Sheep, and Beef Cattle Problems.** (Prerequisites: AI 19 and 24). This course is made up of a series of lectures accompanied by text-book assignments. Present-day problems in horse, swine, sheep, and beef cattle farming will be presented in such a way as to be of direct benefit to the student who expects to undertake the management of a livestock farm. The course will be modified somewhat to meet the needs of the students enrolled. A systematic course of reading is required of each student in connection with this course and an abstract of the material covered must be submitted at the close of the term. One credit hour is given for this outside work. Three lectures per week. Senior year.

Four credit hours

GRADUATE WORK

Properly qualified students may arrange for advance work in Animal Industry leading to an advanced degree in Agriculture. The work the department is doing along investigational lines in animal breeding, nutrition, and disease control in livestock and poultry offers a splendid opportunity for advanced study in this field.

Graduate Seminar

A weekly conference between members of the Animal Industry Staff and graduate students majoring in Animal Industry, including a discussion of experimental or research work recently completed in the Animal Industry field.

Open to graduate students only.

One credit hour

Bacteriology, Physiology, and Hygiene

PROFESSOR PALMER AND MR. H. R. BAKER

The aim of this department is to give the student a knowledge of the fundamentals of bacteriology, point out its relation to the life of man, and prepare him for more advanced work in applied bacteriology. The instruction in physiology aims to acquaint the student with the structures of the body and the role of these various structures in its economy. Special emphasis is given to the study of the physiology of nutrition in order to acquaint the student with the requirements of the body for energy, repair, and the conservation of health. The work in hygiene has for its object a study of disease and the prevention of disease. Agricultural students are offered a special course in animal hygiene dealing with the more common diseases of live stock.

BACTERIOLOGY

Ba 1 and 2 General Bacteriology. A study of the form, structure, distribution, and the properties of bacteria and the relation of bacteria to animal and plant life. In the laboratory the student will be instructed in the technique necessary for practical work in bacteriology. Both saphrophytic and pathogenic organisms will be studied. It is recommended that students complete the course in general physiology before taking this course. Required of Juniors in Agriculture and elective for Juniors and Seniors in Arts and Science.

Six credit hours

Ba 3 Advanced Bacteriology. (Prerequisite: Ba 1 and 2). A lecture and laboratory course, including an advance study of the bacteria related to animal life and the effects of such organisms upon the body tissues. The course also includes a study of natural and artificial immunity. Elective for Seniors in Agriculture and Arts and Science.

Three credit hours

PHYSIOLOGY

Phy 1 Physiology of Digestion, Metabolism, and Nutrition. This course considers the general structure and chemical composition of the body, together with the formation of tissues,

organs, and systems. Following this the processes of digestion, absorption, metabolism, and nutrition are studied in detail. In the laboratory the students will carry out in the test tube digestive processes similar to those occurring in the body.

Three credit hours

Phy 2 Physiology of Respiration, Circulation, Etc. (Prerequisite: Phy 1). This course is a continuation in the study of general and special physiology and deals with circulation, respiration, excretion, special sense organs, and the glands of internal secretion.

Three credit hours

HYGIENE

Hyg 3 and 4 Hygiene and Sanitation. Instruction in this subject covers the principles of sanitation, the cause, methods of spread and prevention of epidemics, and the various methods of disinfection. Required of Juniors in Civil Engineering and elective for Arts and Science students.

Two credit hours

GRADUATE WORK

The Bacteriology and Hygiene laboratories receive a considerable amount of material for diagnosis and study. Such material offers excellent opportunity for advanced study and research. Properly qualified undergraduates and graduates may arrange with the Head of the Department for work of this kind.

Biology

PROFESSOR HOUGHTON AND MR. H. R. BAKER

B 1 and 2 Elementary Zoology. Required of Juniors.
PROFESSOR HOUGHTON *Six credit hours*

B 3 and 4 Systematic and Economic Zoology. Elective for Seniors.
PROFESSOR HOUGHTON *Four credit hours*

B 5 and 6 Economic Entomology. Required of students specializing in Horticulture.
PROFESSOR HOUGHTON *Four credit hours*

B 7 and 8 General Botany. Required of Freshmen.
MR. BAKER *Six credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Chemistry

PROFESSOR PENNY AND ASSOCIATE PROFESSOR TIFFANY

C 11 and 12 Inorganic Chemistry. Required of Freshmen.
PROFESSOR PENNY *Four credit hours*

C 13 and 14 Qualitative Analysis. Required of Freshmen.
PROFESSOR TIFFANY *Three credit hours*

C 21 and 22 Organic Chemistry. Required of Sophomores.
PROFESSOR PENNY *Six credit hours*

C 26 Agricultural Analysis. Required of Sophomores.
Three credit hours

For a detailed statement of courses in this department, see School of Arts and Science.

Economics and Business Administration

PROFESSOR HARRIS

Bus 1 Elementary Economics. Required of Juniors.
PROFESSOR HARRIS *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Education, Psychology, and Sociology

PROFESSOR WILKINSON

Ed 32 Principles of Education. Required of students specializing in Vocational Education.
PROFESSOR WILKINSON *Three credit hours*

Psy 1 Introduction to Psychology. Required of students specializing in Vocational Education.

PROFESSOR CROOKS *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. BLAIR, AND MR. GRAVES

E 1 and 2 Composition. Required of Freshmen.

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. BLAIR, AND MR. GRAVES *Six credit hours*

E 3 and 4 Literature. Required of Sophomores.

ASSOCIATE PROFESSOR FOSTER *Four credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

History and Political Science

PROFESSOR RYDEN

H 3 History and Government of Delaware. Required of Sophomores.

PROFESSOR RYDEN *One credit hour*

H 21 American Government. Required of Seniors.

PROFESSOR RYDEN *Three credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Horticulture

PROFESSOR MCCUE, PROFESSOR DETJEN, AND MR. CLARK

Courses 16, 17, 18, and 33 are required of all students in Agriculture. A student specializing in Horticulture will be expected to take nearly all the courses offered by the Department. Students who major in Horticulture are expected to elect courses 5 and 6 in Biology, and course 2 in Plant Pathology.

The college is very fortunately located for the study of Horticulture. The fruit and vegetable growing centers of the State are easily accessible. Many famous fruit and truck growing districts in neighboring states are distant but a few hours' ride. The cold storage houses and the large markets of Philadelphia can be reached in an hour's time, and a famous greenhouse district of Pennsylvania lies only a few miles north of Newark. The earnest student will have many opportunities to see the practical growing, harvesting, and marketing of horticultural crops.

Hort 16 Plant Propagation. (Prerequisites: B 7 and 8). This course embraces a discussion of the principles and practices of the multiplication of plants. It includes a study of spores, seeds, stratification, and seedage; buds, bulbs, roots, rhizomes, tubers; cuttings of leaves, stems, and roots; herbaceous, soft wood and hardwood cuttings; layerage; grafting waxes and the principal methods of grafting; the establishment and handling of nurseries, a discussion of the various stocks that are used in the propagation of fruit trees and their adaptation. Required of all Freshmen in Agriculture. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 17 Pomology. (Prerequisite: Hort 16). A general course in fruit growing especially designed to meet the needs of the average student. It embraces all of the principles and practices that are essential and necessary in the growing of an orchard, its care and management. It includes such a variety of subjects as choosing a location and site for a fruit farm, the choosing of varieties, the planting of an orchard, pruning, spraying for diseases and insects, cultivation, fertilization, cover crops, rejuvenation of old orchards, harvesting, storing, and marketing of fruit. Required of all Sophomores in Agriculture. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 18 Vegetable Gardening. (Prerequisite: Hort 16). A study of the most important vegetables, their relationship, type, habit of growth, requirements, seeding, culture, control of pests, harvesting, storing, and marketing; the construction and management of flats, hot-beds, and cold-frames. Each student is required to plan, seed, and operate a small garden on the

college grounds in order to become better acquainted with the principles and practices of vegetable gardening. Required of all Sophomores in Agriculture. Two recitations and three laboratory hours.

MR. CLARK *Three credit hours*

Hort 19 Forestry. (Prerequisites: B 7 and 8). An elementary course in Forestry especially designed to meet the requirements of Agricultural students who may be interested in the conservation of forests and wood lands. The course embraces a study of forest trees of the United States, their character, value, and methods of dissemination; the establishment and maintenance of a forest; a study of the most approved methods of handling our forests and wood lands from the standpoint of protection, yield, and reproduction; forest mensuration; forest fires, their nature, prevention, and control. Elective for Juniors and Seniors in Agriculture. Two recitations and three laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 20 Pomology. (Prerequisites: Hort 16 and 17). A course designed to meet the demands for commercial orcharding. Especial emphasis is laid on the pruning of trees, fertilization problems, and the spraying of orchard crops. This course includes a study of the various systems and methods of pruning trees, shrubs, and vines, wound dressings and protection, orchard rejuvenation, history of sprays and spraying, a study of the various insecticides, fungicides, spray pumps and the various kinds of nozzles, time and manner of spraying the horticultural crops for the various insects and fungous diseases. Elective for Juniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 21 or 22 Landscape Gardening. (Prerequisites: B 7, 8; and Hort 16). This course is designed to encourage a wider use of our native and ornamental trees, shrubs, vines, and flowers in the home grounds both rural and urban and in the designing of public parks, schoolgrounds, and highways. It distinguishes between the several kinds of landscape art, between the formal and the informal styles of gardening. It

embraces a discussion of the laws that govern the planting of trees, shrubs, vines, herbaceous perennial and annual plants; the construction of walks, driveways, lawns, and their maintenance. Elective for Juniors and Seniors. Two recitations and two laboratory hours.

MR. CLARK *Three credit hours*

Hort 23 Advanced Pomology. (Prerequisites: B 7, 8; Hort 16, 17, and 20). This course consists of a detailed discussion of all phases of commercial orcharding. Especial emphasis is laid on orchard management, harvesting, storing, and marketing. Elective for Seniors in Agriculture. Two recitations and three laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 24 Breeding of Horticultural Plants. (Prerequisites: Hort 16, 17, 18, and 33). A study of the application of the laws of heredity to economic horticulture. The course includes a study of the more recent methods and developments in plant breeding. Elective for Juniors in Agriculture. Three recitations.

PROFESSOR MCCUE *Three credit hours*

Hort 25 or 26 Small Fruits. (Prerequisites: Hort 16 and 17). A discussion of the commercial production of strawberries, raspberries, gooseberries, currants, and grapes. The course also includes a discussion of the origin and history of the more important varieties. Elective for Juniors and Seniors in Agriculture. Two recitations and two laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 29 Systematic Pomology. (Prerequisites: Hort 17 and 20). A study of the systematic relationship of the cultivated fruits of the United States. Identification, description, and judging of the common commercial varieties of apples, pears, plums, grapes, and peaches grown in America. Elective for Seniors in Agriculture. One recitation and four laboratory hours.

PROFESSOR DETJEN *Three credit hours*

Hort 31 and 32 Horticultural Seminar. A discussion of principles and practices of horticulture and a study of horticul-

tural literature, both past and present, and current events of horticultural interest. Required of all Senior students majoring in Horticulture. One recitation.

PROFESSOR DETJEN *One credit hour*

Hort 33 Genetics. (Prerequisites: B 7 and 8). A brief course discussing the fundamental principles and the various theories of heredity. Required of all Juniors in Agriculture and elective for Juniors and Seniors in Arts and Science. Three recitations.

PROFESSOR MCCUE *Three credit hours*

Mathematics

ASSISTANT PROFESSOR REES

M 18 A short course in mathematics designed for Agricultual students. Required of Freshmen.

Two credit hours

Military Science and Tactics

MAJOR ROW, CAPTAIN SPARKS, AND CAPTAIN MORSE

Mil 1 and 2 Required of Freshmen.

Three credit hours

Mil 3 and 4 Required of Sophomores.

Three credit hours

Mil 5 and 6 Required of Juniors.

Three credit hours

Mil 7 and 8 Required of Seniors.

Three credit hours

For a detailed statement of courses in this department, see School of Arts and Science.

Physics

PROFESSOR HANCOCK

Ps 1 Mechanics, Heat, and Sound. Required of Sophomores.

PROFESSOR HANCOCK *Three credit hours*

Ps 3 Physical Laboratory. Required of Sophomores.
PROFESSOR HANCOCK *One and one-half credit hours*

For a detailed statement of courses in this department, see School of Arts and Science.

Plant Pathology

PROFESSOR MANNS

Pl Path 2 Plant Pathology. (Prerequisites: B 7 and 8; Ba 1 and 2). An elementary course covering the principal bacterial and fungous diseases of the more important economic plants, with special emphasis on orchard and truck diseases. Students will be expected to learn to recognize the more important diseases and to prescribe treatment. Considerable attention will be given to manner of disease distribution, overwintering, and the possible methods of control. Some time will be devoted to isolating and culturing parasitic bacteria and fungi. The more efficient fungicides and disinfectants will be reviewed. Elective for students in Arts and Science and required of Agronomy and Horticultural Juniors in Agriculture. One hour lecture and four hours laboratory.

Three credit hours

Soil Bacteriology

PROFESSOR MANNS

S B 2 Soil Bacteriology. (Prerequisites: Bacteriology 1, 2; Chemistry 26). The course covers a study of the invisible but highly active soil organisms. These organisms, the bacteria, fungi, and protozoa, have been shown in recent years to play an active part in soil fertility and soil sanitation. A study will be made of their work in relation to ammonification, nitrification, and denitrification; the influence of cropping and tillage on the flora and health of the crop; the economic use of fertilizers and lime; bacteria in relation to the fixation of nitrogen by legumes. Elective for Seniors in Arts and Science and Seniors in Agriculture. One hour lecture and four hours laboratory.

Three credit hours

SCHOOL OF ENGINEERING

SCOPE OF THE WORK

The School of Engineering offers instruction in Chemical, Civil, Electrical, and Mechanical Engineering. Upon the satisfactory completion of the work offered by any of the Divisions of Engineering the student receives the degree of Bachelor of Science (B. S.).

The work given in the Engineering School comprises the essentials of a liberal education in addition to a thorough grounding in the fundamental principles of those branches of engineering which are offered in the School.

The curriculum of the School consists almost entirely of required subjects, few electives being offered. By the adoption of this policy a maximum concentration of effort on the part of both the students and the faculty is made possible. All studies which are included in the curriculum are considered essential to the training of an educated engineer.

In addition to fulfilling the specific requirements for graduation as laid down in the statements of the four Divisions of Engineering, candidates for graduation must also attain sixty honor points, to be estimated on the basis of two points for the grade of A in a one-credit-hour course and of one point for the grade of B.*

Division of Chemical Engineering

The Chemical Engineering curriculum is designed to prepare students for work in Chemistry as applied

*Beginning with the class of 1926, all students will be required to take three hours a week in the Department of Physical Education.

in the various industries. Besides the fundamental branches of inorganic, organic, and analytical Chemistry, it includes Chemical Calculation, Electrochemistry, Theoretical and Physical Chemistry, Synthetic Organic Chemistry, and the more important processes of manufacturing and industrial Chemistry; also some important branches of Mechanical and Electrical Engineering, and subjects of general educational value such as Mathematics, Physics, and Language.

During the Junior and Senior years students in charge of a member of the faculty visit various industrial plants in order to supplement the class-room instruction with an inspection of the apparatus and processes used in practice.

The subjects studied in the last two years are particularly useful in the industries. In addition to pure mathematics, much attention is given to the mathematics of chemistry. The calculations made in analysis and in chemical industries are studied carefully both in special courses known as "calculations" and in gas analysis, electrochemistry, and physical chemistry. The student solves problems involved in reactions and processes, and afterwards discusses them in the class-room.

A laboratory course of six hours weekly is given in "organic preparations." This covers the making of many of the more important organic substances including some of the simpler dyes.

The methods of analyzing illuminating gas and fuel gases are studied, and the analyses are made by the students under the direction of an instructor in the laboratory; the economic relations of the gas analyses to heat production and fuel consumption are studied by means of problems and mathematical calculations.

Particular attention is given to the more important manufacturing and industrial processes, the materials used and the products, such as general processes and apparatus, water for industrial purposes, fuels,

destructive distillation, iron, steel, and alloys, ceramics, cements, paints and varnishes, fertilizers, acids, alkalies, chlorine and bleach, oils and fats, paper, textiles and the like. Visits are made by the students to manufacturing plants.

In the Senior year students of chemical engineering undertake an original investigation on some assigned subject, and prepare a thesis reporting the results and conclusions reached.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4, or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 16	6	2
Chemistry, 15	6	2	Mech. Engineering, 22	3	1.5
Mech. Engineering, 21	3	1.5			
	22	16.5		21	15.5
Military Science, 1	3	1.5	Military Science, 2	3	1.5
	25	18		24	17

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Modern Language, 5, or 67	3	3	Modern Language, 6 or 68	3	3
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Chemistry, 21	3	3	Chemistry, 22	3	3
Chemistry, 23	6	2	Chemistry, 24	6	2
	23	19.0		23	19.0
Military Science, 3	3	1.5	Military Science, 4	3	1.5
	26	20.5		26	20.5

JUNIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
Mathematics, 11	4	4	Mathematics, 12	4	4
Chemistry, 31	3	3	Chemistry, 32	3	3
Chemistry, 35	6	2	Chemistry, 36	6	2
Chemistry, 37	3	1	Geology, 32	2	2
Geology, 31	2	2	Elec. Engineering, 2	3	3
Elec. Engineering, 1	3	3	Elec. Engineering, 42	3	1.5
Elec. Engineering, 41	3	1.5	Mech. Engineering, 2	3	3
Mech. Engineering, 1	3	3		24	18.5
	27	19.5	Military Science, 6	3	1.5
Military Science, 5	3	1.5		27	20
	30	21			

SENIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 7	1	1	English, 8	1	1
Chemistry, 31	3	3	Chemistry, 32	3	3
Chemistry, 41	3	3	Chemistry, 42	3	3
Chemistry, 43	3	3	Chemistry, 44	5	3
Chemistry, 45	1	1	Chemistry, 46	1	1
Chemistry, 47	12	4	Chemistry, 50	9	3
Mech. Engineering, 3	2	2	Mech. Engineering, 4	2	2
	25	17.0		24	16.0
Military Science, 7	3	1.5	Military Science, 8	3	1.5
	28	18.5		27	17.5

Division of Civil Engineering

The Division of Civil Engineering provides instruction, by means of recitation, lecture, drawing room, laboratory, and visits of inspection, in the subjects which are essential in highway, railroad, municipal, structural, and concrete engineering. A thorough preparation in mathematics and mechanics is necessary to an understanding of the applied subjects in civil engineering; the work of the first two years is therefore largely given over to the study of these and other fundamental subjects. In the last two years

subjects more closely allied to the work of the civil engineer make up a major portion of the work.

The laboratories of the division provide the means for a first-hand study of the behavior of materials under stress. The general testing laboratory is equipped with machinery for testing materials in shear, tension, compression, bending, and torsion; and other apparatus is available for testing cement, sand, and concrete. The recent addition of a number of machines for testing road materials provides the means for testing road building rock and paving brick.

A summer school in surveying is held for a period of two weeks at the end of both the Freshman and Sophomore years, at which attendance is required of civil engineering students.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
History, 3	1	1	Modern Language, 4, or 64	3	3
Modern Language, 3, or 63	3	3	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Engineering, 21	3	1.5	Mech. Engineering, 22	3	1.5
Mech. Engineering, 57	3	1	Mech. Engineering, 58	3	1
	22	16.5		25	18
Military Science 1	3	1.5	Military Science, 2	3	1.5
	25	18		28	19.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Physics, 7	3	1.5	Physics, 8	3	1.5
Civil Engineering, 23	4	3	Civil Engineering, 24	4	3
Mech. Engineering, 25	5	3.5	Mech. Engineering, 26	5	3.5
	23	19		23	19

Military Science, 3 ...	3	1.5	Military Science, 4 ...	3	1.5
	26	20.5		26	20.5

JUNIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
Mathematics, 11	4	4	Mathematics, 12	4	4
Geology, 31	2	2	Geology, 32	2	2
Hygiene, 3	1	1	Hygiene, 4	1	1
Mech. Engineering, 1	3	3	Civil Engineering, 26	6	4.5
Elec. Engineering, 11	4	3	Civil Engineering, 6..	3	3
Civil Engineering, 25	6	4.5	Civil Engineering, 18	3	3
Civil Engineering, 27	4	2.5	Mech. Engineering, 2	3	3
	24	20		22	20.5
Military Science, 5 ..	3	1.5	Military Science, 6 ..	3	1.5
	27	21.5		25	22

SENIOR YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 7	1	1	English, 8	1	1
Business, 3	3	3	Business, 4	3	3
Civil Engineering, 5..	3	3	Civil Engineering, 10	8	5
Civil Engineering, 7..	3	3	Civil Engineering, 16	7	5.5
Civil Engineering, 9..	9	6	Civil Engineering, 20	5	3.5
Civil Engineering, 29	3	1.5		24	18.0
	22	17.5	Military Science, 8 ..	3	1.5
Military Science, 7 ..	3	1.5		27	19.5
	25	19			

Division of Electrical Engineering

The Courses in Electrical Engineering aim to give the student not only a thorough technical training, but also a liberal education which will enable him to undertake the great variety of problems which present themselves to an engineer. Besides offering instruction in purely technical studies, the courses in-

clude the subjects of English Composition, English Literature, History, French or German, Mathematics, Physics, Mechanics, Chemistry, and Business.

Theoretical work is taught by means of lectures and recitations. The texts used are supplemented by technical periodicals and by numerous problems taken from current practice.

Practical work in electrical laboratories begins with the Junior year and continues to the end of the Senior year. In these laboratories are illustrated the principles taught in the class-room.

Inspection trips made to engineering plants help to bring before the student the conditions to be met with in actual practice.

Every candidate for graduation is required to present a satisfactory thesis embodying the results of some investigation which he has made. This thesis, which must be typewritten, must be accompanied by such drawings and other sheets as are necessary to illustrate and explain the subject. It must be approved by the English Department before it will be accepted.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4 or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Engineering, 21	3	1.5	Mech. Engineering, 22	3	1.5
Mech. Engineering, 51	3	1	Mech. Engineering, 52	3	1
	22	16.5		25	18.0
Military Science, 1	3	1.5	Military Science, 2	3	1.5
	25	18		28	19.5

SOPHOMORE YEAR

First Term	H.	C.
English, 3	2	2
Mathematics, 5	4	4
Physics, 5	5	5
Physics, 7	3	1.5
Mech. Engineering, 25	5	3.5
Mech. Engineering, 53	3	1
	22	17.0
Military Science, 3	3	1.5
	25	18.5

Second Term	H.	C.
English, 4	2	2
Mathematics, 6	4	4
Physics, 6	5	5
Physics, 8	3	1.5
Mech. Engineering, 26	5	3.5
Mech. Engineering, 54	3	1
	22	17.0
Military Science, 4	3	1.5
	25	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Engineering, 1	3	3
Mech. Engineering, 27	3	1.5
Mech. Engineering, 29	4	3
Mech. Engineering, 55	3	1
	23	17.0
Military Science, 5	3	1.5
	26	18.5

Second Term	H.	C.
Mathematics, 12	4	4
Civil Engineering, 6	3	3
Elec. Engineering, 2	3	3
Elec. Engineering, 32	3	1.5
Elec. Engineering, 42	3	1.5
Mech. Engineering, 2	3	3
Mech. Engineering, 30	2	1
Mech. Engineering, 56	3	1
	24	18.0
Military Science, 6	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Business, 3	3	3
Civil Engineering, 7	3	3
Elec. Engineering, 3	3	3
Elec. Engineering, 7	2	2
Elec. Engineering, 43	6	3
Mech. Engineering, 5	5	5
Mech. Engineering, 43	3	1.5
	26	21.5
Military Science, 7	3	1.5
	29	23

Second Term	H.	C.
English, 8	1	1
Business, 4	3	3
Elec. Engineering, 4	3	3
Elec. Engineering, 6	2	2
Elec. Engineering, 8	2	2
Elec. Engineering, 44	6	3
Mech. Engineering, 6	5	5
Mech. Engineering, 44	3	1.5
	25	20.5
Military Science, 8	3	1.5
	28	22

Division of Mechanical Engineering

The instruction which is offered in the Division of Mechanical Engineering comprises those studies which are fundamental to the profession of mechanical engineering. The courses of study offered treat of the development of power, its transmission, and its use. The instruction given includes the principles of the design and mechanical construction of steam engines, gas engines, steam turbines, and steam boilers, the theory and practice of their operation, and a consideration of their efficiencies; the theory and principles of the design of other machines; and the principles and methods of testing motive-power equipment and other machinery.

The aim of the instruction is to train students for positions of responsibility in the engineering world. Special stress is laid on fundamental principles.

The plan of instruction is systematic and thorough. It includes the fundamental studies of English, mathematics, chemistry, physics, French or German, and history and the more technical subjects of mechanism, machine design, direct and alternating current electricity, thermodynamics, heat engines, and the principles of laboratory practice.

During the second term of the fourth year every candidate for graduation must present a satisfactory thesis which shall embody the results of some investigation he has made personally. The thesis must be typewritten and must be accompanied by such drawings and other sheets as are necessary to explain the subject.

The Division of Mechanical Engineering has a well-lighted, airy drafting room; a machine shop equipped with a variety of machines and tools; and a small but serviceably equipped mechanical laboratory and a variety of small apparatus.

Students are required to furnish all instruments and materials used in the drafting-room. The ma-

terials must conform strictly to standards of the Department of Mechanical Drawing, and the instruments must meet with the approval of the instructors.

REQUIREMENTS FOR GRADUATION

FRESHMAN YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 1	3	3	English, 2	3	3
Modern Language, 3, or 63	3	3	Modern Language, 4, or 64	3	3
History, 3	1	1	Mathematics, 4	4	4
Mathematics, 3	4	4	Chemistry, 12	2	2
Chemistry, 11	2	2	Chemistry, 14	3	1
Chemistry, 13	3	1	Civil Engineering, 22	4	2.5
Mech. Engineering, 21	3	1.5	Mech. Engineering, 22	3	1.5
Mech. Engineering, 51	3	1	Mech. Engineering, 52	3	1
	22	16.5		25	18
Military Science, 1	3	1.5	Military Science, 2	3	1.5
	25	18		28	19.5

SOPHOMORE YEAR

First Term	H.	C.	*Second Term*	H.	C.
English, 3	2	2	English, 4	2	2
Mathematics, 5	4	4	Mathematics, 6	4	4
Physics, 5	5	5	Physics, 6	5	5
Physics, 7	3	1.5	Physics, 8	3	1.5
Mech. Engineering, 25	5	3.5	Mech. Engineering, 26	5	3.5
Mech. Engineering, 53	3	1	Mech. Engineering, 54	3	1
	22	17.0		22	17.0
Military Science, 3	3	1.5	Military Science, 4	3	1.5
	25	18.5		25	18.5

JUNIOR YEAR

First Term	H.	C.
Mathematics, 11	4	4
Elec. Engineering, 1	3	3
Elec. Engineering, 41	3	1.5
Mech. Engineering, 1	3	3
Mech. Engineering, 27	3	1.5
Mech. Engineering, 29	4	3
Mech. Engineering, 55	3	1
	23	17.0
Military Science, 5	3	1.5
	26	18.5

Second Term	H.	C.
Mathematics, 12	4	4
Civil Engineering, 6	3	3
Elec. Engineering, 2	3	3
Elec. Engineering, 42	3	1.5
Mech. Engineering, 2	3	3
Mech. Engineering, 28	3	1.5
Mech. Engineering, 30	2	1
Mech. Engineering, 56	3	1
	24	18.0
Military Science, 6	3	1.5
	27	19.5

SENIOR YEAR

First Term	H.	C.
English, 7	1	1
Business, 3	3	3
Civil Engineering, 7	3	3
Elec. Engineering, 3	3	3
Elec. Engineering, 45	3	1.5
Mech. Engineering, 3	2	2
Mech. Engineering, 5	5	5
Mech. Engineering, 41	6	3
	26	21.5
Military Science, 7	3	1.5
	29	23

Second Term	H.	C.
English, 8	1	1
Business, 4	3	3
Elec. Engineering, 4	3	3
Elec. Engineering, 46	3	1.5
Mech. Engineering, 4	2	2
Mech. Engineering, 6	5	5
Mech. Engineering, 42	6	3
	23	18.5
Military Science, 8	3	1.5
	26	20

SUBJECTS OF INSTRUCTION

In this detailed statement of the subjects of instruction the number of credit term-hours is printed in italics at the end of each course. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour, the exact equivalent depending on the nature of the work and the amount of outside preparation required.

Odd numbers are assigned to first term courses; even numbers, to second term courses.

Bacteriology, Physiology, and Hygiene

PROFESSOR PALMER

Hyg 3 and 4 Hygiene and Sanitation.

Two credit hours

For a detailed statement of this course, see School of Agriculture.

Business Administration

PROFESSOR HARRIS

Bus 3 and 4 Business Law.

Six credit hours

For a detailed statement of this course, see School of Arts and Science.

Chemistry

PROFESSOR PENNY, PROFESSOR EASTMAN, AND ASSOCIATE PROFESSOR TIFFANY

C 11 and 12 Inorganic Chemistry.

Four credit hours

C 13 and 14 Qualitative Analysis.

Two credit hours

C 15 and 16 Qualitative Analysis.

Four credit hours

C 21 and 22 Organic Chemistry.

Six credit hours

C 23 Quantitative Analysis.

Two credit hours

C 24 Advanced Quantitative Analysis.

Two credit hours

C 31 and 32 Industrial Chemistry.

Six credit hours

C 33 and 34 Chemical Calculations.

Four credit hours

C 35 and 36 Organic Preparations.

Four credit hours

C 37 Gas Analysis.

One credit hour

C 41 and 42 Physical Chemistry.

Six credit hours

C 43 and 44 Electro Chemistry.

Six credit hours

C 45 and 46 Seminar.

Two credit hours

C 47 Technical Analysis.

Four credit hours

C 49 Food Analysis.

One credit hour

C 50 Thesis. Senior Year.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

Civil Engineering

PROFESSOR THOROUGHGOOD, PROFESSOR PRESTON, ASSISTANT PROFESSOR T. D. SMITH, AND ASSISTANT PROFESSOR RANKIN

CE 5 Hydraulics. (Prerequisites: M 11 and M 12). Physical properties of water; piezometers and gauges; normal pressure and centre of pressure; pressure on immersed bodies and depth of flotation; effects of translation and rotation; the standard orifice; coefficients of the orifice; discharge under falling head; measurements by weirs; study of flow in pipes and in open channels; dynamic action of jets; theory of water wheels. Recitations

PROFESSOR THOROUGHGOOD *Three credit hours*

CE 6 and 7 Mechanics of Materials. (Prerequisites: M 11; Ps 7 and 8). Theory of simple tension, compression, shear, and bending; modulus of elasticity; properties of materials; riveted

joints; shears, moments, and deflections in beams; stresses in thin pipes, cylinders, and spheres; theory of column formulae; theory of torsion; combined stresses; compound beams and bars and reinforced concrete; resilience and least work; steady, impact, and sudden loads and fatigue; true stresses; theory of thick cylinders; rollers, plates, and spheres. Recitations.

PROFESSOR THOROUGHGOOD *Six credit hours*

CE 9 and 10 Structures. (Prerequisites: M 11 and CE 6). Study of structural materials; conditions of loading for maximum shears, moments, and stresses; influence line diagrams; design of girders and bridges; steel viaducts and buildings; design of highway bridges. Drawing room computations and designs of beam, girder, and truss bridges. First term, recitations three hours; design and drawing six hours. Second term, recitations two hours; design and drawing six hours.

PROFESSOR THOROUGHGOOD *Six credit hours first term and five credit hours second term*

CE 16 Municipal Engineering and Reinforced Concrete. (Prerequisites: CE 5 and 6). Types of sewerage systems; designs and construction; methods of treating sewage. Sources of water supply; filtration of water; gravity and pumping systems; storage of water; designing of water systems; distributing systems. Theory of reinforcement in concrete; reinforced beams and girders; box and arch culverts and bridges. Recitations four hours; drawing three hours.

PROFESSOR THOROUGHGOOD *Five and one-half credit hours*

CE 18 Structures. (Prerequisites: M 11 and CE 27). The determination of stresses in roof and bridge trusses by analytical methods; dead, live, snow, and wind load determinations; maximum and minimum stresses; study of different types of bridges; portals and lateral bracing; trusses, bents, and towers. Recitations.

ASSISTANT PROFESSOR T. D. SMITH *Three credit hours*

CE 20 Highways and Highway Laboratory. Prerequisites: CE 7 and CE 29). Highway legislation; preliminary investigations and surveys; earth, sand, clay, gravel, and broken stone roads; bituminous and asphalt road materials; brick, wood, and stone block and concrete roads; sanitation of streets and

roads; highway structures and drainage; study of road material testing. Standard tests of various road-making materials. Recitations two hours; laboratory three hours.

PROFESSOR PRESTON *Three and one-half credit hours*

CE 22 Surveying. (Prerequisite: M 3). Study of the chain, compass, transit, and level; errors in measurements; double meridian distances; computations of areas. Field exercises in the use of the chain, transit, and level; mapping and plotting. Recitations one hour; drawing or field three hours.

ASSISTANT PROFESSOR RANKIN
Two and one-half credit hours

CE 23 and 24 Surveying. (Prerequisites: CE 22 and M 4). Profile and differential leveling; theory of stadia and stadia measurements; city and topographical surveying; mine surveying; methods of computing and plotting; solar observations; the slide rule. Recitations two hours; drawing or field two hours.

ASSISTANT PROFESSOR T. D. SMITH *Six credit hours*

CE 25 and 26 Higher Surveying and Railroads. (Prerequisites: CE 24 and M 6). Theory of triangulation; base line measurements; precision measurements of angles; astronomical determinations; precision and trigonometric leveling; barometer, plane table, and sextant; hydrographic surveying and soundings. Simple compound, and reversed curves; spirals; earth-work and the mass diagram. Field and drawing exercises. Recitations three hours; drawing or field three hours.

ASSISTANT PROFESSOR T. D. SMITH *Nine credit hours*

CE 27 Graphic Statics. (Prerequisite: M 6). Graphical methods applied to the solution of stresses in trusses; theory of force triangle and force polygon; concurrent and nonconcurrent forces; composition and resolution of force; graphical solutions for reactions and stresses from dead, live, snow, and wind loads in roof and other types of trusses. Recitations one hour; drawing three hours.

PROFESSOR THOROUGHGOOD *Two and one-half credit hours*

CE 29 Cement and General Testing Laboratory. (Prerequisite: CE 6). Standard tests on several brands of cement; comparative tests in tension, compression, and bending on neat

cement and mortar specimens; mechanical analysis of sand; comparison of results of fineness test obtained with standard hand process, and mechanical method. Standard tests of wrought iron, cast iron, steel, and wood; determination of elastic limit and modulus of elasticity. Three laboratory hours.

PROFESSOR PRESTON *One and one-half credit hours*

Electrical Engineering

PROFESSOR KOERBER, ASSISTANT PROFESSOR BLUMBERG, AND ASSISTANT PROFESSOR RANKIN

EE 1 Direct Currents. Theory of the direct current dynamo; shunt, series, and compound wound field magnets; ring and drum windings; commutators; direct current motors. Operation, regulation, and methods of testing dynamos and motors. Study of motor and dynamo characteristics. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

EE 2 Alternating Currents. The elementary principles of alternating currents. Inductance and capacity; harmonic electromotive force; single and polyphase circuits. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

EE 3 and 4 Alternating Currents. Continuation of EE 2. Advanced theoretical studies of alternators, synchronous motors, and synchronous converters. High voltage long distance transmission; line phenomena; methods and practice of securing most reliable service. Required of Seniors in Mechanical and Electrical Engineering. Three hours a week.

PROFESSOR KOERBER *Six credit hours*

EE 6 Wireless Telegraphy and Telephony. A study of modern systems with a review of the historical developments. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 7 Electrical Power Plant Engineering. A study of the design and operation of power plants and sub-stations. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 8 Electric Railways. The construction, equipment, and operation of different types of electric railways. Required of Seniors in Electrical Engineering. Two hours a week.

PROFESSOR KOERBER *Two credit hours*

EE 11 Dynamo Electric Machinery. (Prerequisites: Ps 5 and 6). Theory and application of both direct and alternating current machinery. Required of Juniors in Civil Engineering. Four hours a week, two hours of laboratory and two hours of recitation.

ASSISTANT PROFESSOR BLUMBERG *Three credit hours*

EE 32 Electrical Design. The calculation, design, and construction of direct current machinery. Required of Juniors in Electrical Engineering. Three hours a week.

PROFESSOR KOERBER *One and one-half credit hours*

EE 41 and 42 Electrical Laboratory. Determination of characteristic curves; efficiencies and magnetic leakage of direct current dynamos and motors. Test of arc and incandescent lamps. Required of Juniors in Chemical, Electrical, and Mechanical Engineering. Three hours a week.

PROFESSOR KOEBER AND ASSISTANT PROFESSOR RANKIN *Three credit hours*

EE 43 and 44 Electrical Laboratory. Efficiencies and characteristic curves of alternators, synchronous motors, induction motors, and transformers. Required of Seniors in Electrical Engineering. Six hours a week.

PROFESSOR KOERBER *Six credit hours*

EE 45 and 46 Electrical Laboratory. Testing of alternating current machinery and apparatus. Required of Seniors in Mechanical Engineering. Three hours a week.

PROFESSOR KOERBER *Three credit hours*

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. BLAIR, AND MR. GRAVES

E 1 and 2 Freshman Composition.

Six credit hours

E 3 and 4 Sophomore Literature.

Four credit hours

E 7 and 8 Senior Technical English.

Two credit hours

For a detailed statement of these courses, see School of Arts and Science.

Geology and Mineralogy

PROFESSOR PENNY AND ASSOCIATE PROFESSOR TIFFANY

Geol 31 Mineralogy.

Three credit hours

Geol 32 Geology.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

History and Political Science

PROFESSOR RYDEN

H 3 History and Government of Delaware.

One credit hour

For a detailed statement of this course see School of Arts and Science.

Mathematics

PROFESSOR HARTER, PROFESSOR PRESTON, ASSISTANT PROFESSOR T. D. SMITH, AND ASSISTANT PROFESSOR RANKIN

M 3 College Algebra.

Four credit hours

M 4 Advanced Algebra and Trigonometry.

Four credit hours

M 5 Analytic Geometry

Four credit hours

M 6 Calculus.

Four credit hours

M 11 and 12 Theoretical Mechanics.

Eight credit hours

M 24 Solid Geometry.

No credit

For a detailed statement of these courses, see School of Arts and Science.

Mechanical Engineering

PROFESSOR M. VAN G. SMITH, ASSISTANT PROFESSOR BLUMBERG, MR. COYLE, AND MR. LINDELL

ME 1 Elements of Steam Engineering. (Prerequisites: Ps 5 and 6). An elementary study of engines, boilers, steam-pumps, feed-water heaters, condensers and power-plant equipment; free-hand sketches of parts of engines and boilers; practice in the use of an engineering vocabulary. Required of all Juniors in Engineering. Three hours a week.

ASSISTANT PROFESSOR BLUMBERG *Three credit hours*

ME 2 Steam Power. (Prerequisite: ME 1). The principles of construction and operation of steam engines and turbines; methods of power-plant testing; practice in speaking on engineering subjects. Preparatory to courses ME 5 and 6, ME 41 and 42, and ME 43 and 44. Required of all Juniors in Engineering. Three hours a week.

ASSISTANT PROFESSOR BLUMBERG *Three credit hours*

ME 3 and 4 Thermodynamics. (Prerequisites: M 11 and 12). The mechanical theory of heat; its application to gases, saturated and superheated vapors; the theory of steam, air and gas engines, and refrigeration machines. Required of Seniors in Chemical and Mechanical Engineering. Two hours a week.

PROFESSOR SMITH *Four credit hours*

ME 5 and 6 Heat Engines and Boilers. (Prerequisites: ME 1 and 2). The theory and construction of the steam engine. The fundamental principles and construction of steam turbines. The theory and principles of the gas engine; its construction and operation; gas producers. The principles and practice of the efficient combustion of fuels, and the design and construction of steam boilers. Required of Seniors in Electrical and Mechanical Engineering. Five hours a week.

PROFESSOR SMITH *Ten credit hours*

ME 21 and 22 Mechanical Drawing. The care and use of instruments and materials; lettering; section lining; geometrical problems; curve drawing; orthographic projections; the intersection and development of surfaces; isometrics; the layout of elementary machine parts. Required of all Freshmen in Engineering. Three hours a week.

ASSISTANT PROFESSOR BLUMBERG AND MR. LINDELL
Three credit hours

ME 25 and 26 Mechanical Drawing and Descriptive Geometry. The solution of problems relating to points, lines, planes, and surfaces, with practical applications and drawing-room work. Detailed working drawings and assembly drawings; free-hand sketching from machine parts; tracing, blue-printing; computations and drawings made by the use of empirical formulas; structural drawing; the use of hand-books. Required of Sophomores in Civil, Electrical, and Mechanical Engineering. Five hours a week.

ASSISTANT PROFESSOR BLUMBERG AND MR. LINDELL
Seven credit hours

ME 27 Machine Drawing and Design. The elementary theory and principles of the design of machinery. Classroom work, lectures, and drafting. Required of Juniors in Electrical and Mechanical Engineering. Three hours a week.

ASSISTANT PROFESSOR BLUMBERG
One and one-half credit hours

ME 28 Machine Design. The theory and principles of the design of machinery and their application to the design of special parts, comprising the calculation of all stresses and the necessary distribution of metal to withstand the stresses;

properties and uses of materials; bearings and lubrication. Computations and drawing. Required of Juniors in Mechanical Engineering. Three hours a week.

PROFESSOR SMITH AND ASSISTANT PROFESSOR BLUMBERG
One and one-half credit hours

ME 29 Elements of Mechanism. The laws of constrained motion; combinations of pure mechanism; rolling and sliding contact; velocity diagrams; linkwork; cams; forms of gear teeth. The general theory of slide valve and link motions. Required of Juniors in Electrical and Mechanical Engineering. Two hours recitation and two hours drafting a week.

MR. LINDELL *Three credit hours*

ME 30 Valve Gears. The application of the Zeuner diagram to the design of the principal slide-valve gears. This course is a continuation of ME 29. Required of Juniors in Electrical and Mechanical Engineering. Two hours of computation and drafting a week.

MR. LINDELL *One credit hour*

ME 41 and 42 Experimental Engineering. The calibration of instruments; brake and efficiency tests of engines; tests of boilers, steam turbines, steam pumps, blowers, air compressors, gas engines, and condensers; hydraulic measurements; calculations and reports. Required of Seniors in Mechanical Engineering. Six hours a week.

PROFESSOR SMITH AND MR. LINDELL *Six credit hours*

ME 43 and 44 Experimental Engineering. A course similar to ME 41 and 42. Required of Seniors in Electrical Engineering. Three hours a week.

PROFESSOR SMITH AND MR. LINDELL *Three credit hours*

ME 51 and 52 Pattern Making. The care and general use of wood-working tools; the principles of pattern making; patterns for machine parts; core boxes; core making; dry sand molding. The study of a text-book and reading assigned articles in engineering journals. Required of Freshmen in Electrical and Mechanical Engineering. Three hours a week.

MR. COYLE *Two credit hours*

ME 53 and 54 Machine Work. Exercises in metal turning,

facing, boring, drilling, thread chasing, planing, and milling; the use of metal-working hand tools; chipping and filing. The study of a text-book and reading assigned articles in engineering journals. Required of Sophomores in Electrical and Mechanical Engineering. Three hours a week.

MR. COYLE *Two credit hours*

ME 55 and 56 Metal Work and Forging. The construction of machine parts; finishing and assembling; forging; tool dressing and tempering. The study of a text-book and reading assigned articles in engineering journals. Required of Juniors in Electrical and Mechanical Engineering. Three hours a week.

MR. COYLE *Two credit hours*

ME 57 and 58 Machine Work. A course similar to ME 53 and 54. Required of Freshmen in Civil Engineering. Three hours a week.

MR. COYLE *Two credit hours*

Military Science and Tactics

MAJOR ROW, CAPTAIN SPARKS, AND CAPTAIN MORSE

Mil 1 and 2

Three credit hours

Mil 3 and 4

Three credit hours

Mil 5 and 6

Three credit hours

Mil 7 and 8

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

Modern Languages and Literatures

PROFESSOR E. L. SMITH*, ASSISTANT PROFESSOR SALESKI, ASSISTANT PROFESSOR BRINTON, ASSISTANT PROFESSOR KIRKBRIDE†, AND ASSISTANT PROFESSOR LEVINE

ML 3 and 4 Intermediate French.

Six credit hours

ML 5 and 6 Advanced French.

Six credit hours

ML 21 and 22 Elementary Spanish.

Six credit hours

ML 63 and 64 First Year College German.

Six credit hours

ML 67 and 68 Second Year College German.

Six credit hours

For a detailed statement of these courses, see School of Arts and Science.

Physics

PROFESSOR HANCOCK

Ps 5 and 6 General Physics.

Ten credit hours

Ps 7 and 8 Physical Laboratory.

Three credit hours

For a detailed statement of these courses, see School of Arts and Science.

*Deceased, January, 1923.
†On leave of absence.

GENERAL INFORMATION

EXPENSES

Tuition, Board, Room, and Fees

Tuition is free to students whose families reside* in the State of Delaware. The tuition for all other students is $50 per term or $100 per session.

	1st Term	*2d Term*	*Total*
Matriculation fee (at entrance only)	$5.00	$	$5.00
Rooms in Harter Hall (lowest)	26.25	26.25	52.50
Board at University Commons (rate $6.25 per week)	110.00	108.00	218.00
Library, Gymnasium, and general University Fee (Maintenance)	20.00	20.00	40.00
University Fee (Equipment)	2.50	2.50	5.00
Athletic Fee	7.50	7.50	15.00
Infirmary‡	.....	.....	.....
Contingent deposit for breakage, Library fines, or loss of Military equipment	10.00	.....	10.00
Student Government Fee	1.00	1.00	2.00
Total (exclusive of Laboratory and Shop fees)			$347.50
For non-residents add $100 for tuition			100.00
			$447.50

*No person shall be considered eligible to register in the University as a resident of the State of Delaware unless he has resided in the State for the twelve months next preceding the date of proposed enrollment; and no person shall be considered to have gained residence in the State while a student of the institution, unless or until his parents move into the State and acquire bona fide residence there.

‡The infirmary with trained nurse constantly in attendance is maintained at the expense of the University, but students while confined there are required to pay a nominal fee of one dollar ($1.00) for each day or fraction thereof.

Laboratory and Shop Fees

Laboratory and Shop fees vary according to the course taken. The fees for laboratory or shop work in each of the courses named below are as follows:

Agronomy 1	$2.50	Elec. Engineering 42	7.00
Agronomy 2	2.50	Elec. Engineering 43	10.00
Agronomy 4	2.50	Elec. Engineering 44	10.00
Agronomy 5	5.00	Elec. Engineering 45	5.00
Agronomy 7	2.50	Elec. Engineering 46	5.00
Agronomy 9	2.50	Horticulture 16	2.50
Animal Husbandry, 23	2.50	Horticulture 17	2.50
Bacteriology 1	5.00	Horticulture 18	2.50
Bacteriology 2	5.00	Horticulture 19	1.00
Bacteriology 3	5.00	Horticulture 20	2.00
Biology 1	2.50	Horticulture 21	2.00
Biology 2	2.50	Horticulture 23	2.50
Biology 7	2.50	Horticulture 29	2.00
Biology 8	2.50	Mech. Engineering 41	10.00
Chemistry 13	7.50	Mech. Engineering 42	10.00
Chemistry 14	7.50	Mech. Engineering 43	5.00
Chemistry 15	15.00	Mech. Engineering 44	5.00
Chemistry 16	15.00	Mech. Engineering 51	6.00
Chemistry 23	15.00	Mech. Engineering 52	6.00
Chemistry 24	15.00	Mech. Engineering 53	8.00
Chemistry 26	15.00	Mech. Engineering 54	8.00
Chemistry 35	15.00	Mech. Engineering 55	8.00
Chemistry 36	15.00	Mech. Engineering 56	8.00
Chemistry 44	7.50	Mech. Engineering 57	8.00
Chemistry 47	30.00	Mech. Engineering 58	8.00
Chemistry 49	7.50	Military Materials	.50
Chemistry 50 (Thesis)	15.00	Physics 3	5.00
Civil Engineering 29	5.00	Physics 4	5.00
Civil Engineering 20	5.00	Physics 7	5.00
Elec. Engineering 11	7.00	Physics 8	5.00
Elec. Engineering 41	7.00	Plant Pathology 2	2.50
		Soil Bacteriology 2	5.00

PROGRAM OF ENGINEERING FEES

The courses to be taken in the several divisions of the School of Engineering are prescribed, without election, in each year. For the convenience of engineering students the following schedules are given showing cost in each year of the required laboratory and shop work:

Chemical Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Chemistry 15 and 16	$15.00	$15.00	$30.00
Sophomore Year			
Chemistry 23 and 24	15.00	15.00	30.00
Junior Year			
Chemistry 35 and 36	$15.00	$15.00	$30.00
Electrical Laboratory	7.00	7.00	14.00
	$22.00	22.00	$44.00
Senior Year			
Chemistry 47 and 50	30.00	15.00	45.00
Chemistry 44	....	7.50	7.50
	$30.00	$22.50	$52.50

Civil Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Shop	$8.00	$8.00	$16.00
Chemistry	7.50	7.50	15.00
	$15.50	$15.50	$31.00
Sophomore Year			
Physics	5.00	5.00	10.00
Junior Year			
Electrical Laboratory	7.00	....	7.00
Senior Year			
Testing and Highway Laboratory	5.00	5.00	10.00

Electrical Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Shop	$6.00	$6.00	$12.00
Chemistry	7.50	7.50	15.00
	$13.50	$13.50	$27.00

Sophomore Year			
Shop	7.50	7.50	15.00
Physics	5.00	5.00	10.00
	$12.50	$12.50	$25.00
Junior Year			
Electrical Laboratory	7.00	7.00	14.00
Shop	8.00	8.00	16.00
	$15.00	$15.00	$30.00
Senior Year			
Electrical Laboratory	10.00	10.00	20.00
Mechanical Laboratory	5.00	5.00	10.00
	$15.00	$15.00	$30.00

Mechanical Engineering

Freshman Year	*1st Term*	*2d Term*	*Total*
Chemistry	$7.50	$7.50	$15.00
Shop	6.00	6.00	12.00
	$13.50	$13.50	$27.00
Sophomore Year			
Physics	5.00	5.00	10.00
Shop	8.00	8.00	16.00
	$13.00	$13.00	$26.00
Junior Year			
Electrical Laboratory	7.00	7.00	14.00
Shop	8.00	8.00	16.00
	$15.00	$15.00	$30.00
Senior Year			
Electrical Laboratory	10.00	10.00	20.00
Mechanical Laboratory	5.00	5.00	10.00
	$15.00	$15.00	$30.00

General Regulation

The following regulations governing the payment of fees, rents, charges, and deposits have been adopted by the Trustees of the University of Delaware, subject to change at their discretion.

Registration

Students are required to register on the days set apart for that purpose.

Days for Registration, 1923-1924

(1) For first term:
Friday, September 21, 1923—Freshmen and Sophomores.
Saturday, September 22, 1923—Juniors and Seniors.

(2) For second term:
Friday, February 1, and Saturday, February 2.

Any student who fails to comply with this requirement shall be required to pay a fine of $5 for the first day and $1 for each succeeding day until his registration is completed; and if his registration is not completed within five days after the opening day of the term he shall not be permitted to register.

The term "register," as here used, means that a student shall have his schedule approved by the Dean of the School in which he wishes to enroll, shall pay all his bills at the office of the Business Administrator, and shall have his card approved at the Registrar's office. Before applicants for admission to the Freshman class may register, it is necessary for them to secure cards of admission from the chairman of the Committee on Admission.

Payment of Fees and Charges

(1) Matriculation, Tuition, and Fees: A matriculation fee of $5 shall be paid by every new student entering the University. This fee is collected but once. All fees for tuition (tuition

is free to students from the State of Delaware), incidental expenses, and laboratory charges are due and payable on the days set for registration.

(2) Dormitory Rents and Charges: A preliminary payment of $10 is required of a student when he reserves a room. The remainder of the rent for the year is payable, in two equal installments, on the days set for registration in both terms. The preliminary payment of $10 shall be forfeited to the University if the student or applicant for admission fails to complete his registration within five days after the opening day of the session.

(3) Board: All resident students, except those who live at home, are required to board in the dining-halls of the University. The cost of board, with dining-hall service, is $6.25 per week.

Payments for board are due and payable as follows: $55.00 on the days set for registration for the first term; $55.00 on November 15; $54.00 at the time set for registration for the second term; and $54.00 on April 5. Students who fail to pay mid-term board bills on November 15 and April 5, respectively, shall have $1.00 added to the bill for each succeeding day; and if they fail to pay within five days after the bills become due, they shall be dropped from the University.

No refund for absence will be made unless the student is obliged to be away from the University on account of sickness for a period of not less than one week and presents a physician's certificate stating that he was too ill during his absence to attend to his collegiate work. Overhead charges will be deducted from all refunds.

(4) Contingent Fee: Every student shall deposit with the Business Administrator, at the beginning of the session, as a contingent fee the sum of $10 to cover any breakage, damage, loss, or other charges against him. At the end of the year any part of the $10 not so used will be returned to the student.

(5) A Diploma Fee of $10 will be charged to each person who receives a degree in course.

Withdrawals

A student who withdraws from the University may, provided he gives written notice to the Dean at the time of his withdrawal, secure an allowance granted in the following special cases:

(1) If he withdraws within one week of the date on which he registered, he will receive a return of the full amount of the fees paid; but in no case will the matriculation fee be returned.

(2) If he withdraws during the term on account of illness or other physical disability, he will be entitled to a return of an amount which shall be such proportionate part of his entire fees as the number of weeks in which he is not in attendance bears to the number of weeks in the term for which the fees were collected.

Honorable Dismissal and Graduation

No student shall be granted a certificate of honorable dismissal or be graduated who has not satisfied in full all his financial obligations to the University.

Dormitories

Rooms may be obtained in Harter Hall. The rooms are of three classes: single, double, and en suite. The University provides for each student a bed, chiffonier, study table, and two chairs. Other furnishings, including bed clothes and linen, are provided by the student. All rooms are heated by steam and lighted by electricity.

Applications for rooms for 1923-1924 should be made to the Business Administrator. It is recommended that rooms be engaged not later than the month of June. The rentals of the rooms for the collegiate year are as follows:

Single room	$90.00	each student
Double room	$52.50 to 55.00	" "
Suite for two, with separate room for study	125.00	" "
Suite for three	80.00	" "

A payment of $10 on account must be made by each student when he reserves a room. This payment shall be forfeited to the University if the student fails to complete his registration within five days after the opening day of the session.

The University reserves the right to require a dormitory room to be vacated at any time for cause; in which case a proportionate rebate of the sum paid will be made.

When rooms are voluntarily vacated during a term, the rent must be paid until the end of the term.

Registration. Application for admission to college should be made to the Chairman of the Committee on Admission before August 1, 1923. Candidates for admission to the Freshman class are advised to submit their applications and credentials at the time of the Entrance Examinations in June or during the summer preceding the college year in which they wish to enter. Freshmen and Sophomores must register on Friday, September 21; Juniors and Seniors, on Saturday, September 22.

Changes between Schools of Instruction. Changes from one School of Instruction to another may be made only at the opening of a term, with the approval of the Faculty and the consent of parent or guardian.

Examinations. Examinations in all subjects are held at the close of each term and are conducted either in writing, or orally, as the nature of the subject may require or as the professor may prefer. Review examinations are also held at other times whenever, in the judgment of the professor, the objects of instruction may be promoted by such means. The examinations are designed not as a mere test of the student's knowledge, but as a valuable training in rapid, concise, and accurate expression. They serve as a valuable means of giving the student a ready command of his mental powers, and, by encouraging a review of a period of

work, they give him a broader view and a firmer hold of the several subjects of study.

The Honor System was adopted by the student body in 1916.

Promotions and Grades. In determining a student's fitness to proceed to a higher class, great weight is given to the character of his performance of recitation room duties. The results of the term examinations are combined with the recitation records; but in fixing the student's standing the quality of his recitation work is the weightier factor.

No student will be promoted unless he has completed three-fourths of the work of his class of the year just passed and has no condition in previous years unsatisfied.

A student who voluntarily registers in a course for which he has previously obtained credit shall be held responsible for the completion of that course, and the grade obtained upon repetition shall be the official grade.

Re-examinations. Students who fail in an examination in any subject are required to pay a fee of one dollar for re-examination. In order to be admitted to a re-examination students must present to the examiner a certificate properly signed showing that the fee has been paid.

Reports. At the close of each term a report of the student's general combined recitation and examination record will be sent to his parents or guardian. These reports show the course of study the student is pursuing and the class in which he is enrolled. Parents are urged to give these reports close attention, and, when the reports indicate any lack of attention to duty, to co-operate with the Faculty in correcting habits of idleness and indifference.

Elective Studies. Students in the School of Arts and Science must submit to the Dean, on or before

May 15 of each academic year, schedules showing elective courses for the following year.

Attendance. Regular attendance is required at all college exercises. Suitable rules governing absences have been adopted and any student not observing them will be dropped from the college. Punctual return to the college after vacation or at the beginning of a term is insisted upon. All absences immediately preceding or following a vacation are counted double.

All work missed by reason of necessary absences must be made up to the satisfaction of the professor concerned; otherwise the student will be marked zero for each exercise missed. The privilege of making up work will not be granted after an unexcused absence.

Infirmary. To aid in caring for the health of the students, the college has established an Infirmary. In the building are four rooms for ordinary cases, two rooms for contagious diseases, and an office for first aid. The work of the infirmary is in charge of Miss Rosalie Pié, a trained nurse.

Student Self Aid. A committee of members of the Faculty helps to secure employment for students who depend on their own resources. All students wishing to avail themselves of opportunities thus offered are required to register with the chairman of the committee, Professor Harris.

Prizes and Scholarships

THE BISHOP COLEMAN MEMORIAL PRIZE

The Bishop Coleman Memorial Prize of twenty-five dollars is offered annually to the member of the graduating class having in all respects the best standing in the Senior year.

LIEUTENANT CLARKE CHURCHMAN MEMORIAL PRIZE

The Delaware Daughters of the American Revolution and friends of Lieutenant Clarke Churchman have established a "Lieutenant Clarke Churchman Memorial Fund," the income from which is to be used for the encouragement of military virtues and instruction by the annual presentation of a premium to the student who shall attain the highest proficiency in the military department. The prize derived from this fund amounts annually to twenty-five or thirty dollars.

THE PHILO SHERMAN BENNETT PRIZE

The Hon. William Jennings Bryan, in carrying out the will of Philo Sherman Bennett, Esq., late of New Haven, Connecticut, has designated the University of Delaware as one of the twenty-five colleges or universities to receive its share of an endowment of ten thousand dollars to be invested and the proceeds to be applied to the payment of an annual prize "for the best essay discussing the principles of free government." The University of Delaware has accordingly received four hundred dollars in trust for this purpose, and from the income derived from this sum an annual prize will be awarded to the undergraduate student who presents the best essay in the fields prescribed. The income from this fund yields an annual prize of twenty to twenty-five dollars.

THE WILLIAM D. CLARK PRIZE FOR MATHEMATICS

The late Miss Julia Newton Clark, in memory of her father, William D. Clark, offered a prize of twenty-five dollars to be awarded at the end of the Sophomore year to the student who had shown the greatest proficiency in Mathematics during his Freshman and Sophomore years. Since her death this prize has been given by Miss Emma Clark.

THE STATE GRANGE PRIZES

For the purpose of encouraging a high standard of work in the Agricultural courses, the Delaware State Grange has offered three cash prizes of fifteen dollars, ten dollars, and five dollars in gold to be awarded respectively to the three students pursuing the course in Agriculture who have manifested the greatest interest, and made the greatest progress in their work during the year for which the prizes are awarded.

OLD HOME PRIZE *(William H. Purnell Memorial)*

This prize was established by persons interested in the life, history, and biography of the Delmarvia peninsula, and made a memorial to President Purnell. The annual income from a fund of $500 is available for this prize, to be awarded for the best essay on some phase of the history of Delaware or the "Eastern Shore." It is open to all students. Successful essays will be read by title on Commencement Day and will be bound and filed in the College Library. Essays of sufficient merit may be published. Rules for the guidance of contestants will be posted.

ALUMNI PRIZE FOR ADVANCEMENT IN ENGINEERING

A prize of $25 is offered annually by Julius H. G. Wolf, Class of 1893, to the student in Engineering who shows the greatest progress in his work during the Junior and Senior years.

THE COLONEL J. ERNEST SMITH PRIZES

These prizes are paid from the income on $500 donated by Colonel J. Ernest Smith for the highest rating in the Junior and Senior classes in the department of Military Science and Tactics.

SCHOLARSHIP OF THE HARVARD, PRINCETON, AND YALE CLUBS OF DELAWARE

A scholarship amounting to $100 annually was founded in 1914 by the Harvard, Princeton, and Yale Clubs of Delaware. It will be awarded to a deserving student from Delaware. The appointment is made for one year only, but the incumbent for any one year may be reappointed.

SCHOLARSHIP OF THE PRINCETON CLUB OF DELAWARE

A scholarship amounting to $100 annually was founded in 1919 by the Princeton Club of Delaware. It will be awarded to a deserving Delaware student.

THE ROBERT BAYNE WHEELER SCHOLARSHIP

Mrs. Robert Bayne Wheeler has given to the college $2500, the income from which, amounting to about $125, is to be given annually to a deserving Delaware boy to whom this amount will be of service in helping him to obtain an education.

DU PONT SCHOLARSHIP

For the purpose of encouraging young men to specialize in chemistry, the E. I. du Pont de Nemours and Company offers a scholarship of $300 to a Senior student in chemistry.

THE SCHOLARSHIP OF THE SONS OF DELAWARE OF PHILADELPHIA

A scholarship of $300 was founded in 1919 by the Sons of Delaware of Philadelphia. It will be awarded annually to a student from the State of Delaware. The incumbent for any one year may be reappointed.

WILMINGTON CHAPTER SCHOLARSHIP

A scholarship amounting to $100 is offered by the Wilmington Chapter of the Alumni Association to a student who has successfully completed his Freshman year. The holder is to be chosen by the Scholarship Committee of the Wilmington Chapter.

THE TATUM MEMORIAL LECTURE FUND

Mr. Ashton R. Tatum, a friend of the College, at his death left a fund of $1000, the income from which is to be devoted to lectures on the treatment and care of horses.

THE THOMAS J. CRAVEN PRIZE IN AMERICAN HISTORY

In memory of the late Thomas J. Craven, a graduate of Delaware College in 1854 and a life-long student of American History, his daughters, Mrs. John P. Nields (Mary Craven Nields) and Mrs. Henry K. McHarg, Jr. (Jane Craven McHarg, Jr.) of Wilmington, Delaware, gave Delaware College in 1923 the sum of $2,000, the annual income, $100, to be awarded as a prize to a Sophomore in Delaware College, who shall have attained the grade of "A" in the course of American History and submitted the best essay on some topic dealing with constitutional or political phases of American History in the national period. The judges of essays will include one member of the Delaware College Faculty, one member of the Delaware College Alumni, and one member of the Delaware State Bar.

Libraries

The main library of the University, containing about 30,000 volumes, is temporarily located in a separate building facing Old College. It contains a good collection of books for reading and study, reference books, and reading rooms. The books are arranged according to the decimal system of classification on open shelves to which the students have free access. The library is open daily, except Sunday, from 8 A. M. to 6 P. M. and from 7 to 10 P. M., during the regular academic year. During the Summer Session and vacations special hours are announced.

In addition to the collection of books, more than 130 of the leading literary and scientific periodicals are to be found in the reading room. The library receives daily papers from Philadelphia, New York, Boston, and Washington, as well as nearly all of the newspapers issued in Delaware. The University is one of the officially designated depositories of the United States Government, and from this source receives much valuable material.

Various alumni and friends of the University have added to the resources of the library from time to time by gifts of books and magazines. Such gifts are greatly appreciated. They have made possible additions to the library not provided for in the regular budget and have enriched and strengthened the collections of books in special fields.

Besides the main library there is a separate library of over 6,000 volumes for the students of the Women's College. Special reference and technical libraries are maintained in some of the departments under the supervision of the professor in charge. The combined libraries of the University contain about 40,000 volumes. Approximately 6,000 books are now in storage which will be made available when the new Memorial Library is built. The new Library will have a stack capacity of 150,000 volumes.

Athletics

Football, baseball, basketball, track athletics, tennis, rifle shooting, and cross-country running are recognized as collegiate sports.

The general supervision of all athletic sports is vested in an athletic council composed of two members of the Faculty, two members of the Alumni Association, and three undergraduates, chosen from the three upper classes.

All eligibility rules originate with the Faculty.

Any student who is admitted to college later than the second Monday of a term is not eligible during that term to represent the college in intercollegiate contests.

No student is permitted to represent the college on any athletic team or as manager of such, who is not in good standing in his class and doing, at the time, satisfactory work in his studies.

No student pursuing a course other than one leading to a degree will be permitted to represent the college in any athletic contest during his first year in residence, unless he shall have satisfied the entrance requirements of a course leading to a degree.

BUILDINGS AND GROUNDS

GYMNASIUM

A spacious gymnasium containing apparatus for gymnastic exercises, a running track, shower baths, and a swimming pool, affords ample accommodations for indoor athletic sports, such as basketball, indoor-running, swimming contests, wrestling, and boxing.

ATHLETIC FIELD

In Frazer Field, the college possesses one of the best athletic fields in the country. This field, completely equipped, was donated to the college by Mr. and Mrs. Eben B. Frazer, of Newark, and Mr. Stanley

Frazer, '04, of New York city, as a memorial to a son and brother, Joseph Heckart Frazer, '03. The field contains a baseball diamond, football gridiron, tennis courts, and a quarter-mile cinder track with a 220-yard straightaway. It is enclosed with a hollow tile stucco wall and has a beautiful terrace along one side.

State Bacteriological and Pathological Laboratory

By Act of the Delaware Legislature, a State Bacteriological and Pathological Laboratory has been established at the University. The Laboratory is under the management of the State Board of Health. Its location makes accessible the resources of the University in the way of libraries and apparatus.

Organizations

The Agricultural Club. The object of the club is to create enthusiasm and to promote the interests of agriculture among the students as well as to accustom the members to talk on agricultural subjects before an audience.

American Association of Engineers. Delaware College was granted a chapter in the American Association of Engineers in February, 1920. The objects of the American Association of Engineers are to raise the standards of ethics of the engineering profession and to promote the economic and social welfare of the engineer. In addition to upholding the objects of the national association the local chapter aims to provide a means by which the student may be brought into closer touch with the profession for which he is preparing himself.

Athletic Council. The Athletic Council is in direct charge of all athletic activities not constituting a part of the college curriculum. It is composed of two rep-

resentatives from the Faculty, two representatives from the Alumni, and three representatives from the Students, representing respectively the Senior, Junior, and Sophomore classes.

Varsity Club. The Varsity Club is an organization composed of students who have earned their Varsity D.

Derelicts. The Derelicts is an honorary senior fraternity, the purpose of which is to create a spirit of goodfellowship throughout the Senior Class and the Student Body.

Wolf Chemical Club. The Wolf Chemical Club is an organization composed of undergraduate chemistry students of the college, the purpose of which is to furnish a medium through which they may come into closer contact with members of the Faculty and outside professional men.

Faculty Club. A Faculty Club was organized in 1918 for the purpose of promoting social intercourse among the members of the Faculty.

Footlights Club. The purpose of this organization is to present serious plays, comedies, and farces, in Newark or out of town as conditions may determine.

Fraternities. Three national Greek letter fraternities have local chapters at the college: Kappa Alpha (Southern), Sigma Nu, and Sigma Phi Epsilon. Two organizations, Omega Alpha and Gamma Delta Rho, are local.

Phi Kappa Phi. A Chapter of the Phi Kappa Phi, an honorary fraternity devoted to the interests of scholarship, was established at the college in 1905.

Publications

The regular publications of the college consist of the University of Delaware Review, the Bulletin, and the Experiment Station Bulletin.

The **Bulletin** is issued quarterly. One of the four numbers is the Catalogue number.

The Review. The Review is a weekly publication devoted to the general interest of the students. The subscription price is $2.00 a year.

The Blue Hen is a biennial record of college activities issued by the Junior and Senior classes.

The **Experimental Station Bulletin** is issued from time to time by the Experiment Station. One of the numbers is the Annual Report. These bulletins will be sent free to any address in the State.

Students Loan Fund. A Loan Fund to help needy students was established by the Alumni Association in 1915. The object of the Committee, which was appointed by the President of the Association, is to raise a substantial sum of money which will be placed in trust and the income of which will be used to help deserving students. Definite amounts will be loaned to students on promissory notes which the student is expected to meet as soon as he is financially able.

Alumni Organizations and Activities

The Alumni Association of Delaware College is the central organization for the general body of Alumni. Membership is limited to graduates, and to former students who may be elected by the Association.

The Annual Business Meeting is held on the Saturday preceding Commencement Day each year. In the evening various reunions and celebrations are held. A mid-winter dinner is held every year at the College on the Saturday nearest to Washington's Birthday.

Ways and Means Committee for 1922-1923: C. W. Clash, '06, Chairman; Victor H. Jones, '09; Charles E. Grubb, '14; Leroy W. Hickman, '03; Harry G. Lawson, '06; M. Hayes Wilson, '05. Executive Committee: Richard S. Rodney, ex-'04, Chairman; Harris Samonisky, '16, Secretary; Charles W. Bush, '03; C. A. Short, '96; Hugh M. Morris, '98; Norris N. Wright, ex-'10; J. Rankin Davis, '11; H. W. Lyndall, '05, ex-officio. Athletic Committee: Harold W. Horsey, '17, Chairman; Ernest S. Wilson, '18; William L. Beck, '13; William F. Cann, '15; Thomas J. McDonnell, '22.

The officers of the General Alumni Association for 1922-1923 are as follows: President, H. W. Lyndall, '05; Vice-President, A. F. E. Horn, '10; Secretary and Treasurer, George E. Dutton, '04.

Graduates in various parts of the country have organized branch alumni associations. Up to the present time, seven active branches have been formed: The Western Pennsylvania Section, Pittsburgh, Pa.; the New England Society, Boston, Mass.; the New York Chapter, New York City; the Philadelphia Society, Philadelphia, Pa.; the Wilmington Chapter, Wilmington, Delaware; the Lower Delaware Society, Kent Chapter, Dover, Delaware; and the Washington Chapter, Washington, D. C.

DEGREES CONFERRED AT THE ANNUAL COMMENCEMENT OF THE UNIVERSITY OF DELAWARE, JUNE 12, 1922

Civil Engineer

George France Alderson, '15	Kennett Square, Pa.

Electrical Engineer

William Bigelow Hoey, '18	Wilmington

Master of Science

Raymond Melville Upton, '15 Mass. Agr. College	Newark

Master of Science in Chemistry

James Harold Kohlerman, '21	Wilmington

Bachelor of Arts (Arts and Science Course)

John James DeLuca	Wilmington
Robert North Foulk	Wilmington
Abraham Gutowitz	Lewes
Melvin Hopkins	Dover
Thomas Muncy Keith	Dover
Arley Benjamin Magee, Jr.	Dover
Joseph Chandler Wood	Wilmington

Bachelor of Science (Arts and Science Course)

William Christian Baumgardt	Wilmington
Robert Heath Carll	Camden, N. J.
Theodore Roosevelt Dantz	Vineland, N. J.
Clarence William Evans	Newark
William Frederick Harmer	Philadelphia, Pa.
Walter Dean Holton	Newark
William Stavely Lilly, 3rd	Philadelphia, Pa.
Leonard Middleton	Wilmington

Joseph John Rothrock	New Castle
Robert Stewart	Wilmington
Walter John Wagner	Pittsburgh, Pa.
John Edwin Wilson, Jr.	Smyrna
Alfred T. L. Yap	Honolulu, T. H.

Bachelor of Science in Agriculture

Leonard Barrett Daly	Philadelphia, Pa.
Joseph Howard Harper	Still Pond, Md.
Leland Hurff	Elmer, N. J.
George Garabed Kalmy	Boston, Mass.
William Lyle Mowlds	Edgemoor

Bachelor of Science in Civil Engineering

David Robinson Allmond, Jr.	Wilmington
Thomas Joseph McDonnell	Wilmington
Franklin Knight Wills	Wilmington

Bachelor of Science in Mechanical Engineering

Barclay Roberts Challenger	Claymont
Florian Rudolph Deppe	Philadelphia, Pa.
Milton Lowber Draper	Wyoming
Albert Chrisman Reed	Washington, D. C.
Gerald Camille Smith	Wilmington
Willard Robinson Triggs	Wilmington
Howard Pollock Young	Wilmington

Bachelor of Science in Electrical Engineering

Albert Douglas Ayerst	Elkton, Md.
Edgar Bugless	Wilmington
Robert Paulson Fletcher, Jr.	Wilmington
William Franklin Pierce Jacobs, Jr.	Smyrna
Abraham Schimel	Wilmington
Walter Dent Smith	Wilmington

Bachelor of Science in Chemical Engineering

Alvan Allen	Wilmington
George Gray Carter	Newark
Maynard Harper Carter	Wilmington
Charles Rulon Dare	Jamesburg, N. J.
Courtland Forrest Denny	Wilmington
Henry Barwick Geoghegan	Red Lion
Harry Standerman Ivory	Camden, N. J.
Samuel Patterson Maroney	Wilmington
Louis Edward Roemer	Edgemoor
Stanley French Twoes	Camden, N. J.
Charles Whitney Woodrow	Wilmington
Harry Franklin Zimmerman	Wilmington

PRIZES, SCHOLARSHIPS, AND HONORS ANNOUNCED AT THE COMMENCEMENT OF 1922

The Bishop Coleman Memorial Prize: David Robinson Allmond, Jr.

The Lieutenant Clarke Churchman Memorial Prize: Thomas Muncy Keith.

The Philo Sherman Bennett Prize: Merwyn Appleton Akin.

The William D. Clark Prize for Mathematics: Clarence Burwick Downing and John Henry Schaefer.

The State Grange Prizes: First, Herman Wallace Cook; second, Leland Hurff; third, Allen G. Harley, Rehabilitation Division.

The Old Home Prize: Merwyn Appleton Akin.

The Scholarship of the Harvard, Princeton, and Yale Clubs of Delaware for 1922-23 was awarded to John Henry Schaefer.

The Princeton Scholarship for 1922-23 was awarded to John Gilbert Leach.

The Robert Bayne Wheeler Scholarship for 1922-23 was awarded to John Edwin Mortimer.

The du Pont Scholarship in Chemistry was awarded to Earl DeWitt Brandt.

The Sons of Delaware Scholarship for 1922-23 was awarded to Charles Norman Wade.

The following members of the Class of 1922 were elected to the Honorary Fraternity of Phi Kappa Phi:

David Robinson Allmond, Jr.
Albert Douglas Ayerst
George Gray Carter
Milton Lowber Draper
Melvin Hopkins
William Franklin Pierce Jacobs, Jr.
Thomas Muncy Keith
Walter Dent Smith
Willard Robinson Triggs
Franklin Knight Wills

THE WOMEN'S COLLEGE

ACADEMIC COUNCIL

WALTER HULLIHEN, PH. D., D. C. L. *President*
WINIFRED JOSEPHINE ROBINSON, PH. D. *Dean*
GEORGE ABRAM HARTER, PH. D. *Professor of Mathematics*
ELISHA CONOVER, A. M.
Professor of Ancient Languages and Literatures
WILBUR OWEN SYPHERD, PH. D. *Professor of English*
CHARLES CONGER PALMER, S. M., D. V. M.
Professor of Bacteriology and Hygiene
WILLIAM ALBERT WILKINSON, A. M. *Professor of Education*
GEORGE ELLIOTT DUTTON, A. M. *Professor of English*
QUAESITA CROMWELL DRAKE, PH. D. *Professor of Chemistry*
LAURA VEACH CLARK, A. M. *Professor of Home Economics*
WILSON LLOYD BEVAN, PH. D. *Professor of European History*
EZRA B. CROOKS, PH. D.
Professor of Philosophy and Social Sciences
FINLEY MELVILLE KENDALL FOSTER, PH. D.
Associate Professor of English
GEORGE HERBERT RYDEN, A. M.
Associate Professor of American History and Political Science
REINHOLD EUGEN SALESKI, A. M.
Assistant Professor of Modern Languages
GEORGE ELDER BRINTON, PH. B.
Assistant Professor of Modern Languages
RAYMOND WATSON KIRKBRIDE, S. B.*
Assistant Professor of Modern Languages
CARL JOHN REES, A. B.
Assistant Professor of Mathematics and Physics
ALICE M. KRACKOWIZER, A. M. *Assistant Professor of Education*
ISADORE LEVINE, A. M. *Assistant Professor of Modern Languages*
DORA WILCOX *Instructor in Music*
MIRIAM ELLEN NULL, A. B. *Instructor in Home Economics*
RACHEL W. TAYLOR *Professor of Fine and Industrial Arts*
AGNES SNYDER, S. B. *Director of Student Teaching*
ALEXANDER BLAIR, A. B. *Instructor in English*

*On leave of absence.

Elizabeth Gamble Kelly, A. M.	*Instructor in Home Economics*
Dorothy Aileen Calef, S. M.	*Instructor in Biology*
Martha Barrow, S. B.	*Librarian*
Alden Wadsworth Graves, A. B.	*Instructor in English*
H. Raymond Baker, S. B.	*Instructor in Bacteriology*
Marion Chase Parkhurst	*Director of Physical Education*
Angela Marie Weiss, A. B.	*Instructor in French and Spanish*
Ada Willim, S. B.	*Assistant in Chemistry*
Anne Lois Ritz, A. B.	*Assistant in Art*

OTHER OFFICERS

Arthur G. Wilkinson	*Business Administrator*
Edwina Long	*Assistant to the Business Administrator*
Sarah Churchman	*Matron*
Gertrude Cook Sturges, A. B.	*Secretary to the Dean*
Emma Wilson	*Director of Halls*

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

Admission: Miss Snyder, *Chairman;* Miss Null, Professor Brinton.

Advanced Standing: Professor Conover, *Chairman;* Miss Kelly.

Appointments: Professor Wilkinson, *Chairman;* Professor Clark, Miss Snyder.

Assembly Exercises: Miss Ritz.

College Extension: Miss Null, *Chairman;* Miss Snyder.

Courses and Degrees: Professor Wilkinson, *Chairman;* Professor Sypherd, Professor Drake.

Library: Professor Harter, *Chairman;* Miss Barrow, Professor Bevan.

Publicity: Miss Krackowizer, *Chairman;* Miss Parkhurst, Miss Barrow.

Schedule: Professor Foster, Assistant Professor Rees.

Scholarship: Professor Wilkinson, *Chairman;* Professor Sypherd, Professor Clark.

Social Affairs: Miss Taylor, *Chairman;* Miss Calef, Miss Weiss, Professor Crooks, Assistant Professor Rees.

The Dean of the Women's College is ex-officio a member of all committees of the Academic Council.

GENERAL STATEMENT

The Women's College is the outgrowth of the desire of the people of the State to provide higher education for its young women, expressed by the Delaware State Federation of Women's Clubs, the Delaware State Grange, the Delaware Association of College Women, and other organizations, and finally crystallized as the will of the people by the Act of the State Legislature, in March, 1913, which provided for the establishment of a college for women to be affiliated with Delaware College, the appointment of a commission to erect and equip buildings, and the appropriation of funds for this purpose. The members of the Commission were: Honorable Charles R. Miller, Governor of the State; Honorable George W. Marshall, M. D., President pro-tempore of the Senate; Honorable Chauncey Holcomb, Speaker of the House; Dr. George W. Twitmyer, followed by Mr. Harry Hayward, representing the State Board of Education; Mrs. A. D. Warner, representing the Delaware State Federation of Women's Clubs; Mr. S. J. Wright, representing the Trustees of Delaware College.

AIMS AND PURPOSES

The aims and purposes of education in general are the same for women as for men—the stimulation of their intellectual life, the increase of their breadth of vision, the development of scientific accuracy, the creation of an interest in community, state, national, and international affairs.

The specific aims of a college for women are to cultivate executive ability, self-control, and willingness to subordinate immediate advantage to the future good; in short, to train for leadership in all those

phases of life for which women naturally take the burden of responsibility.

REQUIREMENTS FOR GRADUATION

Candidates for graduation in all courses are required to complete 120 credit term-hours of work in addition to twelve term-hours of Physical Training.

In order to qualify for graduation, a student must also obtain sixty honor points, these honor points to be estimated on the basis of two points for the grade of "A" in a one-credit hour course and one point for the grade of "B" in a one-credit hour course.

SCHOOL OF ARTS AND SCIENCE

The Arts and Science courses are designed to meet the requirements of a liberal education. In accordance with this general aim, considerable freedom in the choice of studies is allowed, particularly in the last two years of the course. The studies of the Freshman year are virtually prescribed.

Arts and Science students who contemplate teaching in the high schools of Delaware must take Psychology 31, Education 41, and Education 47 or 48 in order to meet the requirements for certification.

Graduates from the course in Arts and Science who have offered for admission four years of Latin or Greek or who have completed in college an equivalent amount of work will receive the degree of Bachelor of Arts; all other graduates will receive the degree of Bachelor of Science.

PRESCRIBED STUDIES

English	18
Mathematics	6
Modern Language	12
History and Economics	12
Science (Chemistry, Biology, or Physics)	12
Electives	60
Physical Training	--
	120

FRESHMAN YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 1	3	English, 2	3
Mathematics, 3	3	Mathematics, 4	3
Language—Latin, Spanish, French, or German	3	Language—Latin, Spanish French, or German	3
History, 1	3	History, 2	3
Elective—One subject (Biology, Physics, Chemistry, Greek, Latin)	3	Elective—One subject (Biology, Physics, Chemistry, Greek, Latin)	3

SOPHOMORE, JUNIOR, AND SENIOR YEARS

At the beginning of the Sophomore year every candidate for the degree of Bachelor of Arts or Bachelor of Science shall elect from the following list of subjects a major study, in which she shall complete thereafter 18 hours of work.

During these three years students must take, in addition to the required work in Physical Training, all prescribed subjects not completed in the Freshman year and elective courses sufficient to make a total of thirty credit term-hours each year.

MAJOR ELECTIVES

Biology
Chemistry
Education
English
French or German
Greek or Latin
History and Economics
Mathematics
Physics

ELECTIVE COURSES 1923-1924

	1st Term	*2d Term*
Ancient Languages, 1 and 2, 3 and 4, 5 and 6, 7 and 8	3	3
Ancient Languages, 21 and 22, 23 and 24, 25 and 26	3	3
Bacteriology, 1, 2	3	3
Biology, 1, 2, 3, 4	3	3
Biology, 5, 6	3	3
Biology, 12	–	3
Chemistry, 1, 2	3	3
Chemistry, 3, 4	3	3
Chemistry, 7, 8	3	3
Chemistry, 9, 10, 11, 12	3	3
Education, 11, 12	3	3
Education, 21, 22	3	3
Education, 32, 41	3	3
Education, 42	–	3
Education, 47, 48	3	3
English, 12, 19	3	3
English, 22, 33	3	3
English, 45, 46	3	3
Fine Arts, 1, 2	3	2
Fine Arts, 3, 4	3	3
Fine Arts, 6	–	3
Fine Arts, 7, 9	4	–
Fine Arts, 11, 12	3	3
History, 13, 14	3	3
History, 21, 22	3	3
History, 25, 26	3	3
History, 27, 28	1	1
History, 29, 30	1	1
History, 31, 32	1	1
Home Economics, 1, 5, 11	3	–
Home Economics, 2, 4, 6	–	3
Mathematics, 3, 4	3	3
Mathematics, 5, 6	3	3
Modern Languages, see pages 194 ff.		
Music, 5 and 6	3	3
Philosophy, 1, 2	3	3
Physics, 1, 2, 3, 4	3	3
Physiology and Hygiene, 1, 2	3	3
Sociology, 1, 2	3	3

SCHOOL OF EDUCATION

Purposes

The primary purpose of the School of Education is to prepare candidates for the profession of teaching. Preparation for teaching is assumed to include (1) a broad general or liberal education, (2) proficiency in the specific and related subject-matter which the candidate expects to teach, and (3) professional training including an acquaintance with educational theory and the acquisition of skill, gained through supervised practice, in the technique of teaching and classroom management.

Secondarily, the School of Education seeks to cooperate with other agencies and to render such other services as may be practicable in promoting the educational interests of the state. Lines along which such service may now be rendered include the giving of extension courses for teachers in service; co-operating with superintendents and school officials in making educational measurements; supplying teachers in service with such materials, helps, and exhibits as may grow out of the regular work of the various departments; participation by members of the staff in teachers' institutes, educational conferences, parent-teacher meetings, etc.

Admission

To be admitted as a "regular" student the candidate must fulfill the requirements stated elsewhere in this catalogue, pp. 21 ff.

In exceptional cases a student lacking some of these qualifications but who is 21 years of age or over, has had experience in teaching, and gives evidence of being able to pursue the courses desired may be admitted as a "special" student. No "special" student may

receive a degree or teacher's diploma until she has satisfied the requirements for admission as a "regular" student.

Curriculum for Elementary Teachers

In the absence of any other institution in the State for the preparation of teachers for elementary schools the School of Education offers the following two-year curriculum designed to meet this need.

		First Year	*First Term*	*Second Term*
Ed	11	Introduction to Teaching	3	–
Ed	12	Observation and Participation	–	3
Ed	13-14	The Teaching of Geography	3	3
Ed	17	The Teaching of Arithmetic	3	–
E	1-2	English Composition	3	3
B	8	Biology—Short Course	–	2
FA	7	Drawing and Industrial Arts	2	–
FA	2	Appreciation of Art	–	2
Mu	1-2	Public School Music	1	1
Ph	4	Hygiene and Sanitation	–	3
P	9-10	Physical Education	–	–
		Second Year		
Ed	21-22	Directed Student Teaching Including Educational Measurements	5	5
Ed	23-24	The Teaching of English	3	3
Ed	26	The Teaching of History and Civics	–	2
B	9	Nature Study	2	–
H	5-6	United States History	3	3
FA	9	Drawing and Industrial Arts	2	–
Psy	32	Child Psychology	–	3
Mu	3-4	Public School Music	1	1
P	11-12	Physical Education Including Supervision of Play	–	–

Upon the satisfactory completion of this curriculum the student is awarded an Elementary Teacher's Diploma. This diploma from the College is accepted by the State Department of Education as meeting the requirements for a first-grade elementary teacher's certificate in Delaware.

Students who are preparing to teach in rural schools may substitute for certain courses in the foregoing list such subjects as Rural School Management, Rural Sociology, General Agriculture, etc.

The Degree of Bachelor of Science in Education

The degree of B. S. in Education is conferred by the University upon students who fulfill the requirements for graduation from the School of Education. The degree is awarded in accordance with the following regulations:

1 The candidate must have satisfied in full the entrance requirements to the College.

2 She must complete 120 credit hours of work exclusive of physical education, and earn an average of 15 honor points per year for each year spent in the College.

3 The following subjects are required of all candidates for the degree:

	Credit hours
English	12*
Foreign Language	12
History	6
Biological Science	6
Physical Science or Mathematics	6
Sociology, Economics	6
Psychology	6
Education	18

4 Candidates who are preparing to teach in secondary schools must offer for graduation (1) from 18 to 24 hours work in one academic subject, the exact number of hours depending on the subject chosen; (2) 18 hours in a second academic subject; (3) 6 hours in Secondary Education. Courses required under rule

* Students who do not attain a satisfactory standard in English are required to take additional work in this subject.

3 may be counted toward the fulfillment of these requirements.

5 Students who are specializing in the field of elementary education may substitute for the requirements of rule 4 such courses in academic subjects and in Elementary Education as may be approved by the faculty upon the recommendation of the committee on Courses and Degrees.

High School Teacher's Diploma

The High School Teacher's Diploma is conferred by the College upon students who have completed all requirements for the Bachelor's degree and who have taken, as a part of the work offered for the degree, not less than 12 hours in Education and 6 hours in Psychology. Of the 12 hours in Education at least 6 hours must be in the field of Secondary Education.

This diploma is accepted by the State Department of Education for certification to teach in high schools.

Professional Courses for Students in Arts and Science

Certain courses in Education and Psychology are open, as electives, to students in the School of Arts and Science (see Elective Courses, page 164). If these courses are taken with a view to meeting requirements for certification to teach they should be chosen with the advice of the Director of the School of Education, or of the Superintendent of Public Schools in the State in which the candidate expects to teach. Arts and Science students may receive the High School Teacher's Diploma by fulfilling the conditions stated in the preceding paragraph.

Advanced Standing

Advanced credit toward the degree of B. S. in Education is allowed for such courses taken in other

standard colleges or schools of Education as are the equivalent of the courses given in the School of Education of the University of Delaware. In general, graduates of the two-year curriculum in the School of Education, or of an equivalent two-year course in an approved normal school, may be awarded the degree of B. S. in Education upon the satisfactory completion of 60 credit hours of additional college work, these 60 hours to include all prescribed courses and requirements not previously satisfied.

Satisfactory work done in approved summer schools may be counted toward the Elementary Teacher's Diploma or the degree of B. S. in Education in so far as the courses taken may be regarded as the equivalent of courses required in the School of Education.

The granting of advanced standing is conditioned in all cases upon the student's having satisfied the regular entrance requirements. The Women's College reserves the right to decide just how much advanced credit shall be allowed in any given case.

Directed Student Teaching

Arrangements have been made with the Newark Public School authorities whereby opportunities for directed observation and student teaching in the local schools are provided. Certain teachers in the local schools serve as co-operating teachers for this work. For students in the two-year course the work consists of observation, participation, graded individual group and classroom teaching in the various subjects of the elementary school curriculum, including music, art, and play, in the first six grades. Prospective high school teachers do their observing and teaching in the high school where usual secondary school conditions prevail. In addition, the Opportunity Class of the local schools, an ungraded group of children, is utilized for experimental work in Psychology and in methods of dealing with special classes of pupils.

All of this work is done under the general supervision of the Director of Student Teaching of the School of Education in co-operation with the superintendent of the Newark Schools and with the assistance of the heads of certain departments in the Women's College. This connection with the local schools is used both as a means of imparting skill in the technique of teaching and as a laboratory for much of the work in Psychology and the theoretical courses in Education.

Courses for Teachers in Service

Upon the request of a sufficient number of teachers in service, or of the proper school officials, certain courses will be given at such centers as may suit the convenience of the groups concerned. Courses suited to the needs of both elementary and secondary teachers may be arranged for. Credits earned in these courses may be applied, in the case of students qualified to meet entrance requirements, toward the Elementary Teacher's Diploma or the degree of B. S. in Education.

Appointment Committee

The Appointment Committee of the Women's College is maintained for the purpose of assisting students in securing desirable positions. While the activities of the Committee are not restricted to the members of any particular School or Department of the College or special type of employment, yet one of its principal functions has to do with the placement of worthy candidates for teaching positions. It keeps on file a record of such information, including scholarship, technical training, experience, etc., as will make possible the largest measure of service both to the candidate and to the prospective employer.

The services of the Committee are not limited to present members of the student body but are at the

disposal of alumnae and former students of the College. All communications looking to a change of position will receive prompt attention by the Committee.

SCHOOL OF HOME ECONOMICS

The courses in Home Economics are designed to meet the needs of students who intend to teach homemaking in the secondary schools or who wish to apply the knowledge gained from this course to the management of the home.

Students who do not wish to teach may substitute courses of equal value for the required courses in Psychology and Education.

PRESCRIBED STUDIES

English	12
Economics and Sociology and History	15
Chemistry	12
Physics	6
Bacteriology	6
Physiology	6
Fine Arts	6
Education, Psychology	9
Home Economics (Technical courses)	30
Home Economics (Methods)	6
Electives	12
Physical Training	--
	120

FRESHMAN YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 1	3	English, 2	3
Chemistry, 1 or 11	3	Chemistry, 2 or 12	3
History, 5	3	History, 6	3
Home Economics, 1	3	Home Economics, 2	3
Fine Arts, 3	3	Home Economics, 4	3

SOPHOMORE YEAR

First Term	*Credits*	*Second Term*	*Credits*
English, 5	3	English, 6	3
Chemistry, 7	3	Chemistry, 8	3
Physiology, 1	3	Physiology, 2	3
Home Economics, 5	3	Home Economics, 6	3
Physics, 1	3	Physics, 2	3

JUNIOR YEAR

First Term	*Credits*	*Second Term*	*Credits*
Psychology, 31	3	Education, 32	3
Bacteriology, 1	3	Bacteriology, 2	3
Home Economics, 9	3	Home Economics, 10	3
Home Economics, 11	3	Fine Arts, 6	3
Elective	3	Elective	3

SENIOR YEAR

First Term	*Credits*	*Second Term*	*Credits*
Economics, 25	3	Economics, 26	3
Home Economics, 19	3	Home Economics, 20	3
Home Economics, 13	6	Sociology	3
Elective	3	Elective	3
		Education, 42	3

SUBJECTS OF INSTRUCTION

By Departments

In this detailed statement of the subjects of instruction, the number of credit term-hours is printed in italics at the end of each course. If the actual hours of recitation, lecture, and laboratory work differ from the credit hours, the number of actual hours is stated immediately before the credit hours.

Odd numbers are assigned to first-term courses; even numbers, to second-term courses.

Credits for laboratory work depend upon the nature of the work and the amount of preparation required. Not less than two hours and not more than three hours of laboratory work are counted as equivalent to one credit hour.

Ancient Languages and Literatures

Professor Conover

Throughout the course the aim is to enable the student to acquire facility and quickness in reading at sight and familiarity with the ancient order of thought. Word-meaning is fixed by inspecting form, derivation, and comparison with synonyms. The authors are selected with a view to their representative character. The public and private life of the Greeks and Romans and their influence on modern literature and civilization are continually kept before the minds of the students. English derivatives and words kindred to all Indo-European tongues are frequently noted, and the general principles of comparative philology are explained and applied.

LATIN

AL 1 and 2 Cicero, De Senectute or De Amicitia. Ovid, Metamorphoses, etc. Pliny, Selected Letters, Prose Composition.

Six credit hours

AL 3 and 4 Livy, 21st or 22nd book. Horace, Odes, Epodes, Satires, Epistles.

Six credit hours

AL 5 and 6 Tacitus, Germania and Agricola. Plautus, Captives and Trinummus. Juvenal, Satires.

Six credit hours

AL 7 and 8 Seneca, Tragedies or Moral Essays. Terrence, Adelphoe and Andria. Quintilian, Books X and XII. Lectures on Latin Literature and Inscriptions.

Six credit hours

GREEK

AL 21 and 22 White's First Book.

Six credit hours

AL 23 and 24 Anabasis I-IV. Homer, Iliad, I-III.

Six credit hours

AL 25 and 26 Lysias, Orations. Plato, Apology and Crito. Aristophanes, Plutus or Clouds.

Six credit hours

Bacteriology

PROFESSOR PALMER AND MR. BAKER

Ba 1 General Bacteriology. A lecture and laboratory course, including the morphology, biological characters, distribution, and classification of bacteria and their relation to plant and animal life. In the laboratory the student will be instructed in the technique necessary for practical work in bacteriology, including cleaning and sterilization of apparatus, making culture media, and studying bacteria in cultures and under the microscope. Required of Juniors in Home Economics and elective for Juniors and Seniors in Arts and Science. One lecture and six laboratory hours a week. Fee $2.50.

Three credit hours

Ba 2 Sanitary Science. (Prerequisite: Ba 1). A study of our environment in its relation to health and disease, including food, water, air, soil, disposal of wastes, vital statistics, diseases of occupation, industrial hygiene, and public health. Provision is to be made for at least five field trips to study rural and urban conditions affecting public health. Required of Juniors in Home Economics and elective for Juniors and Seniors in Arts and Science.

Three credit hours

Biology

MISS CALEF AND DEAN ROBINSON

B 1 General Biology: Part 1. Zoology. A general treatment of the principles of biology and a survey of the animal kingdom from protozoa to the mammals. The biological and economic significance of each group is discussed in lectures. The laboratory periods are devoted to a study of the structure of representative animals, and to field trips. Two lecture periods, two two-hour laboratory periods, and assigned reading each week. Laboratory Fee, $3.50.

Three credit hours

B 2 General Biology: Part II. Botany. (Prerequisite: B 1). A survey of the plant kingdom from one-celled forms to flowering plants, inclusive. The biological and economic significance of each group is discussed in lectures. The laboratory periods are devoted to a study of the function and structure of the parts of representative plants, and to field work, whereby the student may become familiar with the flowers, trees, shrubs, and weeds of the region. Two two-hour laboratory periods and two lecture periods, with assigned reading each week. Laboratory fee, $3.50.

Three credit hours

B 3 Physiology of Plants. (Prerequisite: Six credit-hours of Biology). This course treats of the activities of plants: their irritability, nutrition, growth, and reproduction. The various phases are discussed and illustrated by laboratory experiments. Two lectures and four laboratory hours a week, with assigned reading. Laboratory fee, $3.50.

Three credit hours

B 4 Systematic Botany. (Prerequisite: Six credit hours of Biology). This course is largely field work and deals with the identification of trees, shrubs, and herbs in both winter and summer condition, and with their systematic position. Laboratory fee, 3.50.

Three credit hours

B 5 Comparative Anatomy. (Prerequisite: Six credit hours of Biology). This course deals with the comparison of

representative chordates from amphioxus to mammals. Typical chordates are dissected in the laboratory and the evolution of their anatomy studied. It is suggested that this course be succeeded by Embryology. Two lecture periods, two two-hour laboratory periods, and assigned reading. Laboratory fee, $3.50.

Three credit hours

B 6 Embryology. (Prerequisite: Nine credit hours of Biology, three of these in Comparative Anatomy). An introduction to the fundamental facts of reproduction and embryology. The lectures will be based on the laboratory work, which will include a study of the sex cells, maturation, fertilization, types of cleavage, formation and early development of the vertebrate embryo. Emphasis will be placed on the embryology of the chick, which will be supplemented by comparison with other forms. Two lecture periods, two two-hour laboratory periods, and assigned readings. Laboratory fee, $3.50.

Three credit hours

B 7 Theoretical Biology. (Prerequisite: Twelve credit hours of Biology). An historical survey of biological theory. A considerable amount of outside reading is required. Two recitation periods, one conference period per week. [Omitted in 1923-24.]

Three credit hours

B 8 (Formerly B 9) Nature Study. A study of the common insects, weeds, trees and birds of the locality. Field trips are supplemented by occasional lectures. This course is planned to give to the two-year students in Education such fundamental facts as will enable them to guide children into a knowledge and appreciation of the plant and animal life around them. Two two-hour laboratory periods. Laboratory fee, $3.50.

Two credit hours

B 11* Biology, Short Course. This course is designed to give through laboratory and lecture demonstrations the fundamental principles of biology with special emphasis on the development and structure of the nervous system in order to meet

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*Students who change from the two-year to the four-year course in Education may substitute B 8 and B 11 for B 1.

the needs of the two-year students in Education. Two two-hour laboratory periods. Laboratory fee, $3.50.

Two credit hours

B 12 Genetics. A study of the principles of heredity. Two lectures, one quiz, and assigned reading each week.

Three credit hours

Chemistry

PROFESSOR DRAKE AND MISS WILLIM

C 1 and 2 Inorganic Chemistry. This course includes a study of the fundamental laws of chemical action, the properties, uses, and methods of preparation of the elements and their compounds. In the laboratory the student performs experiments illustrating the topics in the lectures. Freshman year. Two demonstrations, one recitation, and four laboratory hours. Laboratory fee, $3.50 per term.

Six credit hours

C 3 Qualitative Analysis. (Prerequisites: C 1 and 2). The identification and separation of the metals and of the acids are taught. The systematic analysis of simple and complex substances is taken up and a few commercial products are analyzed. Sophomore or Junior year. Two lectures and five laboratory hours. Laboratory fee, $3.50.

Three credit hours

C 4 Quantitative Analysis. (Prerequisites: C 1 and 2). This is an elementary course in which the simpler methods of gravimetric and volumetric analysis are studied. Sophomore or Junior year. Second term, one lecture and six laboratory hours. Laboratory fee, $3.50.

Three credit hours

C 5 and 6 Organic Chemistry. (Prerequisites: C 1 and 2). This course includes a study of the important classes of organic compounds, the methods of preparation, reactions, relations to each other, and structural formulas. In the laboratory organic compounds are prepared, illustrating important types of reactions, and their qualitative reactions studied. Sophomore

or Junior year. Two lectures and five laboratory hours. Laboratory fee, $5.00 per term. [Omitted in 1923-24].

Six credit hours

C 7 and 8 Household and Food Chemistry. (Prerequisites: C 1 and 2). This course is designed to meet the needs of the students in Home Economics. After a brief introduction to organic chemistry it treats of the chemistry of foods, beverages, baking materials, preservatives, etc., and the elementary physiological chemistry of the digestive tract. Sophomore year. One lecture, one recitation, and five laboratory hours. Laboratory fee, $5.00 per term.

Six credit hours

C 9 and 10 Physiological and Food Chemistry. (Prerequisites: C 1 and 2, 4, 5 and 6). This course is designed for Seniors majoring in chemistry. It treats in considerable detail the chemistry of fats, carbohydrates, and proteins, the physiological chemistry of digestion, the blood, animal heat, etc. Part of the time will be devoted to the quantitative analysis of typical food products, such as milk, cereals, etc. Senior year. One lecture and six laboratory hours. Laboratory fee, $5.00 per term.

Six credit hours

C 11 and 12 Inorganic Chemistry. A course designed to meet the needs of students who have had one year of high school chemistry. After a review of the fundamental laws of chemical action, emphasis is laid on elementary analytical chemistry and inorganic preparations. Students may be admitted to this course only on the presentation of their high school note books with a statement of the number of hours spent in the laboratory and classroom. Two demonstrations, one recitation, and four laboratory hours a week. Laboratory fee, $3.50 per term.

Six credit hours

Education and Psychology

PROFESSOR WILKINSON, ASSISTANT PROFESSOR SNYDER, AND ASSISTANT PROFESSOR KRACKOWIZER

Ed 11* (Formerly Ed 1) **Introduction to Teaching.** This is a general survey course designed to give the student acquaintance with the fundamental principles underlying modern educational theory. The course is centered around the consideration of the aims of education, the character of original nature, and the laws of learning. Each principle proposed is illustrated in the demonstration school, and a working theory of educational practice is built up through a discussion of the observation thus made.

Three credit hours

Ed 12 (Formerly Ed 2) **Observation and Participation.** This course is designed to serve as a link between Ed 11 and Ed 21. Application of the principles worked out in Ed 11 is made to such class-room problems as: lighting, heating, and seating arrangements; management of materials, dismissals, assemblies, recesses; records and reports; testing children's progress; planning work for the year, month, day; studying children as groups and as individuals; lesson types—drill, problem, construction, appreciation. The students observe and participate in the foregoing activities.

Three credit hours

Ed 13 and 14 The Teaching of Geography. This course includes a survey of the physical, industrial, and political geography of each continent with a consideration of the fundamental principles underlying geographic controls. The study begins with the home and its environs and widens to include the State and the United States and finally all continents and countries. Much attention is given to the physical conditions which influence the production of raw materials, especially those that enter into food, clothing, and shelter, the development of manufactures, the laying out of routes, the location of markets and the distribution of raw and manufactured articles. Suggestions for

*The first figure in a course number indicates the year in which the course should ordinarily be taken.

the use of pictures, specimens, maps of various kinds, etc., are given.

Three credit hours

Ed 17 The Teaching of Arithmetic. This course deals with the subject-matter and methods of teaching arithmetic in elementary schools. It considers projects suitable to the several grades through which work in arithmetic may be motivated, and it stresses the use of business methods, the selection of practical material, the elimination of subject-matter that does not function in life, and the use of systematic drills to fix habits of speed and accuracy. Subject-matter is taught along with the methods, and tests for speed and accuracy are given at intervals both to locate weaknesses in the class that need to be worked on and to illustrate their use with children.

Three credit hours

Ed 21 and 22 Directed Student Teaching, Including Educational Measurements. The work of this course consists of a study of the school situation in which the teaching is to be done. This study includes the making and interpretation of an age-grade distribution; the giving, and scoring of standard tests and the tabulation and interpretation of the results; the grouping of children for effective work. The teaching is based on the findings of the foregoing study. The work is graded in difficulty, the student gradually assuming the more complex processes until full control and management of details of the class for a complete session is possible.

Ten credit hours

Ed 23 and 24 (Formerly Ed 11 and 12). The Teaching of English. This course includes (a) practice in correct usage through drills suitable for use in elementary grades; (b) practice in written language work of various types with discussions of projects through which such work can be motivated for children and of special methods of teaching written language; (c) the presentation of principles and methods of teaching silent and oral reading, and a survey of the literature suitable for use in the various grades, with methods of teaching it.

Three credit hours

Ed 26 (Formerly Ed 16) **The Teaching of History and Civics.** This course aims to give the modern point of view regarding the teaching of history and civics in the elementary school. It stresses the fact that the chief aim of history teaching in the grades is not to give information about the past, but to enable the learner to interpret present conditions and to solve present problems more intelligently. It therefore emphasizes the industrial and social aspects of the subject. The course deals largely with the history of the United States and Delaware, though some attention is given to European history as a background. Many possible problems are discussed and outlined and some illustrative ones are worked out in class. Special attention is given to methods of study, use of textbooks, supplementary materials, etc.

Three credit hours

Ed 32 (Formerly Ed 4) **Principles of Education.** (Prerequisite: Ed 11 or Psy 31). This course begins with a brief review of present-day tendencies and practices in education; traces the origin and development, since the time of Rousseau, of important educational ideals with reference to such problems as aims, curriculum-making, methods of teaching, organization, etc., and seeks to integrate the principles derived into a unified body of educational doctrine.

Three credit hours

Ed 41. The Technique of High School Teaching. (Prerequisite: Psy 31 or its equivalent). This course aims to give the student insight into and some facility in the application of accepted principles and methods of high school instruction and class management. Lesson assignments, questioning, supervising pupils' study, socializing the class period, motivating school work, discipline and student morale, and measuring the results of teaching are some of the topics studied. As often as practicable class discussions are based on observations of actual classroom exercises and special demonstration lessons. Open to Juniors and Seniors.

Three credit hours

Ed 42 Principles of Secondary Education. (Prerequisites: Psy 31 or 32 and Ed 41 or 47). This course begins with a

brief history of secondary education in the United States; compares secondary education in this country with that in certain European countries; examines current tendencies and practices with respect to aims, organization, curricula, and methods of teaching; seeks to organize the principles learned into a sound working theory of secondary education.

Three credit hours

Ed 47 or 48 Directed Student Teaching in High School. (Prerequisite: Psy 31 or 32). Open to Seniors who are preparing to teach in secondary schools. Each student is given opportunity to teach the subject in which she is majoring and one other subject. The course consists of one group conference hour a week, individual conferences as needed, and 30 hours of teaching.

Three credit hours

Psy 31 (Formerly Psy 1) **Psychology: Introductory Course.** This course aims to give the student such a knowledge of the factors and laws of human behavior as the teacher needs to possess. It includes a study of such topics as instincts and native capacities, methods and laws of learning, individual differences, and mental hygiene.

Three credit hours

Psy 32 (Formerly Psy 2) **Child Psychology.** (Prerequisite: Ed 11 or Psy 31). The course aims to follow the development of child life in its various aspects from infancy through adolescence. Two lecture hours are correlated with one hour of directed observation of children and with individual problems involving psychological testing.

Three credit hours

English

PROFESSOR SYPHERD, PROFESSOR DUTTON, ASSOCIATE PROFESSOR FOSTER, MR. BLAIR, AND MR. GRAVES

The courses in the Department of English are designed (1) to enable every student at graduation to express her ideas, orally or in writing, in accurate, clear, effective English; and (2) to give to students through required and elective work an acquaintance with the best authors in English and American

Literature and an appreciation of good poetry and prose. All Freshmen are required to take Composition, which involves training in oral and written expression; all Sophomores, a general course in Literature, which treats writers, types, and movements. Seniors in Arts and Science are required to take an additional course in English.

E 1 and 2 Composition. An elementary course which lays especial stress on accuracy and clearness in expression. Recitations, themes, practice in public speaking, conferences, and outside readings. Required of all Freshmen. Credit is given only for the full course.

PROFESSOR DUTTON, MR. BLAIR, AND MR. GRAVES
Six credit hours

E 5 and 6 Literature. General Survey. A brief survey of the history of the English language and literature, followed by a more detailed and thorough study of the main literary forms—narrative and lyric poetry, the drama, the novel, and the essay. Discussions, lectures, outside readings, reports, and conferences. Required of all Sophomores.

ASSOCIATE PROFESSOR FOSTER AND MR. GRAVES
Six credit hours

E 9 and 10 Composition and Literature. A study of the English essay with exercises in expository writing, first term; a study of the short-story in English, with exercises in narrative writing, second term. Required of Seniors in Arts and Science.

PROFESSOR SYPHERD *Six credit hours*

E 12 [11] Composition. An advanced course in narrative and descriptive writing. Themes, outside reading, and conferences. Elective for Sophomores and Juniors in Arts and Science.

MR. GRAVES *Three credit hours*

E 19 [20] Literature. Shakspere. The Elizabethan stage; social, political, and literary conditions; a study of selected plays. Elective for Juniors and Seniors.

Three credit hours

E 22 [21] Literature. Modern Drama. A cursory view of the English drama since Shakspere. Recent and contempor-

ary European drama (Continental plays in translation). Elective for Juniors and Seniors.

Three credit hours

E 27 [28] **Literature.** A literary study of the Bible. This course is an introduction to the literary study of the English Bible. It involves a general consideration of the contents and the composition, a brief review of the history of the Translations or Versions, a discussion of the literary forms and the literary qualities, and a study of its influence in English Literature. [Omitted in 1923-1924].

PROFESSOR SYPHERD *Three credit hours*

E 33 [34] **Literature.** A general survey of the field of American Literature from Franklin to the present time and an intensive critical study of the most important work of the chief American poets and prose writers. Lectures, recitations, outside reading, and reports. Elective for Sophomores and Juniors.

PROFESSOR DUTTON *Three credit hours*

E 39 [40] **Literature.** Emerson. A study of Emerson as poet, essayist, and philosopher. Elective for Juniors and Seniors. [Omitted in 1923-1924].

PROFESSOR DUTTON *Three credit hours*

E 45 **Literature.** Victorian Poetry. This course is centered about the poems of Browning, Tennyson, Arnold, and Swinburne. The aim of the course is to obtain a knowledge of the poetry of the period, to study the poems as an expression of the philosophy of life of each of the poets, and to correlate this poetry with the social movements of the time. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

E 46 **Literature.** The Novel. The object of this course is to discuss the principles of novel-writing and to apply these principles in the form of criticism of modern novels. Certain novels of Hardy and Meredith are carefully studied in class. The members of the class make frequent reports on selected modern novels. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR FOSTER *Three credit hours*

Fine Arts and Industrial Arts

MISS TAYLOR AND MISS RITZ

The courses in the Art Department are designed to meet the special needs of three distinct groups of students: (1) those taking the Arts and Science Course, (2) those taking the Home Economics Course, and (3) those who expect to teach in the elementary schools. Each group, therefore, has its special aims but the main objectives common to all courses are as follows:

A To acquaint the students with some of the greatest art of the world and awaken in them a keen appreciation of beauty as it occurs in nature and the plastic and graphic arts, to the end that this appreciation may add to the joy and pleasure of living.

B To cultivate the taste and judgment of students that their daily expressions may be in greater accordance with the laws of beauty; and to open up numerous avenues of worthwhile avocations.

C To provide a thorough technical foundation for anyone of especial ability who desires to take up some phase of art work as a profession.

FA 1 Art Appreciation and History. A study of the historical development of painting, sculpture, and design, preceded by study of the space arts, composition of line and mass, and color theory. Lectures are illustrated with slides and prints. Students are required to keep note books with prints and tracings. Three lecture hours.

Three credit hours

FA 2 [Formerly FA 5]. Art Appreciation. A course for elementary teachers. The course is similar to FA 1, but less emphasis is put on the historical development of painting, sculpture, and design, and greater emphasis on the elementary principles of art structure and color theory. Two lecture hours.

Two credit hours

FA 3 Principles of Design. A course in the elementary principles of art structure, practice in the use of line, dark and light and color, with pencil, charcoal, crayon, brush and ink, and water color. Study of spacing, rhythm, color theory. Adaptations of given designs and practice in original design. Studio work five hours and lecture one hour.

Three credit hours

FA 4 Applied Household and Costume Design. Original designs are made, and applied to problems for the home and costume through the processes of weaving, block printing, stenciling, embroidery, batik, and tied and dyed work. A study is made of similar work in other countries. Studio work five hours and lecture one hour.

Three credit hours

FA 6 House Planning and Furnishing. An advanced course completing the work of FA 3. It includes drawing of house plans to scale, study of styles of architecture, period furniture, selection, framing and hanging of pictures, and problems of furnishing from both the artistic and economic standpoint. Studio work five hours and lecture one hour.

Three credit hours

FA 7 and 9 [Formerly 8 and 9] **Drawing and Industrial Arts.** A course for elementary teachers offering practice in representation and illustration, blackboard drawing, lettering, composition, design, and color related to the regular school work. Problems in schoolroom decoration, interior decoration, and costume design. A study of some of the important industries of the country, involving simple problems in poster making, bookmaking, cardboard construction, weaving, claymodeling, etc. Observation and practice teaching in the town schools. Studio work four periods per week.

Four credit hours

FA 11 and 12 Drawing and Painting. This course offers practice in line and tone, perspective, technique of charcoal and crayon, and painting in water color from still life, supplemented by study of modern art and art processes. Studio work five hours and lecture one hour.

Six credit hours

History and Political Science

PROFESSOR BEVAN, ASSOCIATE PROFESSOR RYDEN, AND MR. BLAIR

The courses in this Department are arranged in the approximate order in which they should be taken by the student. In the first two years certain courses are required; all other courses are elective for properly qualified students. Sophomores

may, with permission of the Department, elect certain courses in addition to the required work. Courses 13 to 16 will usually be given in alternate years.

H 1 and 2 Modern European History. A general survey of European history in its political and social aspects from 1500 to the present time. This course is designed for beginning students in history and affords the basis for advanced work in European history. Text-book, discussion, and collateral readings. Required of Freshmen in Arts and Science and Education.

PROFESSOR BEVAN AND MR. BLAIR *Six credit hours*

H 5 History of the United States (1763-1848). An advanced course in American history, embracing a study of the Revolutionary period, the formation of the Constitution, foreign relations, early national development, Jacksonian democracy, westward expansion, and the Mexican War. Required of Sophomores in Arts and Science, Home Economics, and the four-year course in Education.

ASSOCIATE PROFESSOR RYDEN *Three credit hours*

H 6 History of the United States (since 1848). A continuation of course 5, dealing with the slavery controversy, the Civil War, reconstruction problems, material development, and contemporary history and problems. Required of Sophomores in Arts and Science, Home Economics, and the four-year course in Education.

ASSOCIATE PROFESSOR RYDEN *Three credit hours*

H 13 The Renaissance and Reformation. The political background of the period is studied, but special emphasis is laid on social and economic conditions, the development in art and literature, and the causes and results of the Protestant revolt. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 14 The French Revolution and Napoleon. A special study of the Revolutionary era; the characteristics of the Ancien Régime, the philosophers and economists, the course of the Revolution, the rise of Napoleon, and the wars of the Empire. Elective for Juniors and Seniors.

PROFESSOR BEVAN *Three credit hours*

H 15 History of Greece. A general survey of Greek history to the Roman conquest with emphasis on the cultural epoch following the Persian Wars and with some attention given to Greek Art and Literature. Elective for Juniors and Seniors. [Omitted in 1923-1924].

PROFESSOR BEVAN *Three credit hours*

H 16 Constitutional History of England. A survey of the historical development of English political and legal institutions. Elective for Juniors and Seniors. [Omitted in 1923-1924].

PROFESSOR BEVAN *Three credit hours*

H 21 and 22 American Government. A general course dealing with the organization and activities of the American government—both national and state. Stress is placed upon practical problems and present-day developments. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR RYDEN *Six credit hours*

H 25 Principles of Economics. A one-semester introductory course which aims to give a general survey of Economics. Readings and reports. Required of Juniors in Education and Seniors in Home Economics. Elective for Juniors in other courses.

PROFESSOR BEVAN *Three credit hours*

H 26 Economic Problems. (Prerequisite: H 25). A continuation of course 25, dealing with selected topics and special problems of contemporary interest and importance. Required of Seniors in Home Economics. Elective for Juniors and Seniors in other courses.

PROFESSOR BEVAN *Three credit hours*

H 27 and 28 Studies in Delaware History. An advanced course which offers opportunity to develop special topics in the social economic, and political history of the State. The purpose of this course is to afford training in research work. Elective for Juniors and Seniors.

ASSOCIATE PROFESSOR RYDEN *Two credit hours*

H 29 and 30 Special Topics: History of Political Theories. A study of the representatives of political thought from Plato's

Republic to modern times. Open to Seniors only.

PROFESSOR BEVAN *Two credit hours*

H 33 and 34 Special Topics: American History and Government. A specific course of research work will be assigned to students in the fields of American History, and Government. Reports required at stated intervals. Elective for Seniors.

ASSOCIATE PROFESSOR RYDEN *Two credit hours*

Home Economics

PROFESSOR CLARK, MISS NULL, AND MISS KELLY

HE 1 Textiles and Laundering. A study of textiles, including cotton, linen, silk and other fabrics, in order to enable students to exercise good judgment in purchasing and using these fabrics. Clothing costs and readjustments in terms of a budget. A study of the principles and processes involved in laundry work. Labor-saving appliances, space, equipment, and materials required for work in the home. Required of Freshmen in Home Economics. Two hours lecture and two hours laboratory. Laboratory fee, $2.50.

MISS KELLY *Three credit hours*

HE 2a Elementary Clothing. (Prerequisite: C 1). Hand and machine sewing applied to shirtwaists and skirts. Study of commercial patterns. Household sewing. Embroidery-forms of decorative needlework studied, classified, and adapted to household linens. Students provide their own materials subject to the approval of the instructor. Required of Freshmen in Home Economics who have had previous training. One hour lecture and five hours laboratory. Laboratory fee, $2.50.

Three credit hours

HE 2b. Elementary Clothing. (Prerequisite: He 1). Hand work and elementary sewing; study, practice, and application of the fundamental stitches to simple garments and household furnishings. The care and use of the sewing-machine and its attachments. Darning, patching, and simple embroidery. Students provide their own materials subject to the approval of the instructor. Required of Freshmen in Home Economics who enter without previous training. One hour lecture and five hours laboratory. Laboratory fee, 2.50.

Three credit hours

HE 4a Foods and Cookery. (Prerequisite: C 1). This course reviews processes and principles of food preparation. It includes a study of foods in relation to composition, energy value, function in the diet, cost, production, and manufacture. Required of Freshmen in Home Economics who have completed two years of vocational Home Economics, or the equivalent, in high school. Two hours lecture and two hours laboratory. Laboratory fee, $2.50.

MISS NULL *Three credit hours*

HE 4b Foods and Cookery. (Prerequisite: C 1). This course is designed to teach the fundamental principles underlying the selection and preparation of food. It includes a study of the composition and energy value of typical foods, their function in the diet; processes of cookery; food production, distribution, and manufacture. Required of Freshmen in Home Economics who enter without Home Economics credits. One hour lecture and five laboratory hours. Laboratory fee, $2.50.

MISS NULL *Three credit hours*

HE 5 Foods and Cookery. (Prerequisite: HE 4). This course includes a study of food preservation, the essentials of an adequate diet, the planning of menus, the preparation and serving of meals, marketing and the cost of food for the family group. Required of Sophomores in Home Economics. One hour lecture and five laboratory hours. Laboratory fee, $5.00.

MISS NULL *Three credit hours*

HE 6 Drafting and Elementary Dress-Design. (Prerequisites: HE 1 and 2, or equivalent work). This course gives practice in making patterns by drafting and by altering commercial patterns to fit the individual. From these, other patterns are designed and modeled in cambric. Design and fitting are emphasized. Middy blouse, simple wash dress and a simple afternoon dress. Students provide their own materials subject to the approval of the instructor. Required of Sophomores in Home Economics. One hour lecture and five hours laboratory. Laboratory fee, $3.00.

MISS KELLY *Three credit hours*

HE 9 Nutrition. (Prerequisites: HE 4 and 5, C 7 and 8,

and Ph 1 and 2). This course includes a study of the chemical elements and compounds involved in the nutrition of the human body, digestion and metabolism, and the energy value and cost of food. Dietaries adequate in energy and protein for various types of individuals are planned and prepared. Two lecture and two laboratory hours. Laboratory fee, $5.00.

MISS NULL *Three credit hours*

HE 10 Nutrition. (Prerequisites: HE 4, 5, and 9, C 7 and 8, and Ph 1 and 2). Minerals and vitamines are studied as essentials of an adequate diet. Dietaries meeting the needs of families and individuals of various types and ages are planned and prepared. The course also considers the factors which influence the cost of food, principles of wise expenditure, food fads and sanitation and diet in disease. Two lecture and two laboratory hours. Laboratory fee, $5.00.

MISS NULL *Three credit hours*

HE 11 Child Care and Training. (Prerequisite: Ph 1 and 2). A study is made in this course of the normal development of the child, and of the factors and problems of physical care and training, which are related to the principal stages of growth. Causes and prevention of maternal and infant mortality; and the public protection of maternity and infancy are also studied. Two hours lecture and two hours laboratory. Laboratory fee, $2.50.

MISS NULL *Three credit hours*

HE 13 or 14 Household Management. (Prerequisites: HE 1, 2, 4 and 5). The application of scientific and economic principles to the problems of the home. The course includes marketing, planning and preparation of meals, household accounts, daily and weekly care and repair of the home. Experience in various phases of home management is given in the Practice House, where groups of students live and work under supervision. Required of Juniors and Seniors in Home Economics. One hour lecture and fifteen hours laboratory.

PROFESSOR CLARK *Six credit hours*

HE 16 Foods and Cookery. (Prerequisites: HE 4 and 5). An advanced course which aims to give the student a wider

knowledge of available food materials; of the great variety of seasonings and flavors; and practice in some of the more complicated processes of cookery. Elective for all students who have the required preparation. One hour lecture and two hours laboratory. Laboratory fee, $7.50.

One and one half credit hours

HE 17 Dressmaking. (Prerequisites: HE 1, 2, and 6). This course includes the cutting and making of a tailored silk shirt and a wool dress. Use of commercial patterns; technic of design, workmanship, and finish. Students provide their own materials subject to the approval of the instructor. Elective for all students with prerequisites. One hour lecture and two hours laboratory. Laboratory fee, $1.50.

MISS KELLY *One and one half credit hours*

HE 18 Applied Dress-Design. (Prerequisites: HE 1, 2, 6 and 19). Study of the figure; its proportion, lines, and various views. Development of economy and good taste in line, color, and textiles; designs for dresses for different functions and seasons adapted from fashion magazines. Conservation of materials. Combinations of colors in wools and various materials to show their qualities and their possibilites. Practice through the use of various media such as muslin, cheesecloth, and crinoline. Study of dress accessories. Students provide their own materials subject to the approval of the instructor. Elective for Seniors in Home Economics. One hour lecture and five hours laboratory. Laboratory fee, $5.00.

MISS KELLY *Three credit hours*

HE 15 Elementary Nutrition. This course is designed to present essential information concerning foods and nutrition which will make possible, intelligent selection of food at various costs, for any type of individual at any age. Sources of energy, proteins, minerals, and vitamines will be studied by working with real food problems. Elective for all students. Two hours lecture and two hours laboratory. Laboratory fee, $5.00.

MISS NULL *Three credit hours*

HE 22 Health and Home Nursing. (Prerequisites: Ph 1 and 2). This course considers the prevention and control of

sickness through proper hygiene and sanitation; care of the sick, and first aid treatment for common household emergencies. Elective for all students. One hour lecture and two hours laboratory. Laboratory fee, $1.50.

MISS NULL *One and one-half credit hours*

HE 19 Methods of Teaching Vocational Home Economics. A study of the selection of subject matter, methods of presentation, class management, equipment, and illustrative material adapted to the teaching of the different phases of home making. The planning of a course of study for vocational classes. Required of Seniors in Home Economics.

PROFESSOR CLARK *Three credit hours*

HE 20 Practice Teaching. This course consists of the teaching of Home Economics subjects to classes in secondary schools. It includes the preparation of lesson plans, the collection of illustrative material, and the keeping of records and reports. Required of Seniors in Home Economics.

PROFESSOR CLARK *Three credit hours*

Mathematics

PROFESSOR HARTER AND ASSISTANT PROFESSOR REES

Three hours a week in Algebra and Trigonometry are required of all students in the Freshman year in the course in Arts and Science and in the course in Education. Elective courses are provided for students who may desire to continue Mathematical work beyond the Freshman year.

M 3 College Algebra, including a rapid review of the Elements, Quadratics, Arithmetical and Geometrical Progressions, Permutations and Combinations; Complex Numbers; Theory of Equations; Logarithms. Required of Freshmen in Arts and Science, and in Education.

Three credit hours

M 4 Trigonometry, Plane and Spherical. Required of Freshmen in Arts and Science, and in Education.

Three credit hours

M 5 Analytic Geometry. (Prerequisites: M 3 and 4). Conic Sections and Higher Plane Curves in Cartesian and Polar

Co-ordinates; Solid Analytic Geometry. An elective course open to all who have the requisite preparation.

Three credit hours

M 6 An introductory course to the Calculus. Open to election to such as have completed M 5.

Three credit hours

M 7 and 8 (Prerequisites: M 5 and M 6). Differential and Integral Calculus, and Differential Equations.

Six credit hours

M 9 [10] The History of Mathematics. Elective for all students.

Two credit hours

M 13 Geometry of Space. A course for students in Arts and Science, and in Education who do not offer Solid Geometry upon entrance and who wish to pursue mathematics studies in advance of M 4. No college credit will be given for work done in this course.

Modern Languages and Literatures

PROFESSOR E. L. SMITH,* ASSISTANT PROFESSOR SALESKI, ASSISTANT PROFESSOR BRINTON, ASSISTANT PROFESSOR LEVINE, AND MISS WEISS

French, German, and Spanish are offered to those who wish to elect them.

The aim of the courses offered in Modern Languages is to provide elementary and intermediate instruction in German, French, and Spanish. Students who have completed commendably the courses offered in these languages may expect to possess a good pronunciation, an accurate reading knowledge of the language, and an acquaintance with the more important authors and some familiarity with the more important literary groups and movements. The scientific and commercial aspects of the languages receive due attention but without overlooking the more important cultural values. An effort is made to acquaint the student with the several European civilizations from the linguistic and literary point of view, and to inspire in her such a love for these languages and literatures as will be a source of pleasure and intellectual growth.

*Deceased, January, 1923.

FRENCH

ML 1 and 2 Beginning French. For Freshmen who may elect French to satisfy their required work in Modern Languages. This course is a required course for students whose entrance preparation in French has been found to be deficient (see page 25). Upon satisfactory completion of this course, students are prepared to enter ML 3 and 4.

Six credit hours

ML 3 and 4 Intermediate French. This course is designed to meet the demands of Freshmen who have satisfactorily passed the departmental entrance test in French. A rapid but thorough review of French grammar. French composition is continued throughout the course by means of themes, reports, letter-writing, etc. Aural and phonetic training. One period a week is devoted to the rapid reading of French texts, newspapers, etc., which are used as a basis for vocabulary building.

Six credit hours

ML 5 and 6 Advanced French. (Prerequisite: ML 3 and 4, or its equivalent.) Continuation of the work of ML 3 and 4. Formal Composition. Outline of the history of French literature with illustrative reading. Aural training and definite emancipation from the dictionary are two primary aims of this course.

Six credit hours

ML 7 Continuation of ML 5 and 6. First semester of Junior year. Elective for students who have completed ML 5 and 6 or equivalents. The aim is a wider reading knowledge and further vocabulary building. Texts are chosen to form an introduction to the work in literature courses.

Three credit hours

ML 8 Literature. Second half of the Junior year. Elective for students who have completed ML 7. French literature from 1600 to Chateaubriand. French classic drama—Corneille, Racine and Molière. Voltaire, Diderot, and Rousseau. Readings. in literary history and criticism.

Three credit hours

ML 8T Teaching of French in Secondary Schools. Second

semester of Junior or Senior years. For students who have completed ML 7 and who desire to prepare for the teaching of the language methods, materials and texts, etc. Students taking this course may also elect ML 8 or ML 10 at the same time. (Course to be given when elected by sufficient number of students.)

Three credit hours

ML 9 and 10 Nineteenth Century Literature. From the Romantics to the reaction against Naturalism. Drama, poetry, and the novel. The latter part of the course will treat contemporary writers and tendencies.

Six credit hours

SPANISH

ML 21 and 22 Elementary Spanish. Stress is laid on accurate pronunciation, mastery of the elements of grammar, and the acquisition of vocabulary. Oral and written exercises. Reading of easy modern Spanish prose. Composition and conversation. Hills and Ford, Spanish Grammar. DeVitis, Spanish Reader. Crawford, Spanish Composition. Gil Blas.

Six credit hours

ML 23 and 24 Advanced Spanish. Attention will be given to both practical and literary ends. Conversation and composition in Spanish throughout the year. Humphrey's Spanish Prose Composition. During the first half of the year representative plays and novels from the nineteenth century will be read and studied. During the second half either Cervantes' Don Quixote or the dramas of Lope de Vega and Calderon will be studied. Lectures, readings, and reports.

Six credit hours

GERMAN

ML 61 and 62 First Reading Course. The aim of this course is to provide the student with an elementary reading knowledge of the language. Lutz, Elementary German Reader; Bernhardt, Deutsche Literaturgeschichte. No credit is given for less than the full course.

Six credit hours

ML 63 and 64 Second Reading Course. The purpose of this course is to help the student attain ease and accuracy in the reading of more difficult German. Bender's German Short Stories, von Klenze's Deutsche Gedichte, and Greenfield's Technical and Scientific German have been read. No credit is given for less than the full course.

Six credit hours

ML 65 Language Course. (This course is prerequisite to all courses above 70). Grammar, composition, conversation.

Three credit hours

ML 71 and 73 Goethe. (Prerequisite: ML 65). Conducted mainly in German. [In 1923-1924 ML 73 will be omitted].

Each, three credit hours

ML 72 Lessing. (Prerequisite: ML 65). [Omitted in 1924-1925 and 1925-1926].

Three credit hours

ML 74 Schiller. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925].

Three credit hours

ML 76 The German Drama since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1925-1926].

Three credit hours

ML 78 German Prose since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1924-1925].

Three credit hours

ML 80 German Lyric Poetry since Goethe. (Prerequisite: ML 65). Conducted mainly in German. [Omitted in 1923-1924 and 1925-1926].

Three credit hours

Music

MISS WILCOX

Mu 1 and 2 Public School Music. Course A

Sight Reading.

This is an elementary course in theory and sight reading. In order to complete this course, the student must be able to sing at sight individually, using the Latin syllables, Music suitable for the first four years in the public schools.

Dictation. (Study of tone and rhythm).

The subject matter of music is presented to the sense of hearing. The student gains the power to think tones and sense rhythms, and learns to recognize and write simple melodic phrases in all keys.

Material and Methods.

This course is devoted to the study and demonstration of material and methods for the first four years of music in the schools. Special attention is given to the selection, presentation, and interpretation of rote songs for the primary grades.

Mu 3 Public School Music. Course B

Sight Reading

This course requires singing at sight individually, with and without syllables, music suitable for the seven years in the public schools.

Dictation

This course deals with the problems of tone and rhythm included in the seven years in the public schools.

Material and Methods

The teaching of music in the upper grades is taken up in detail, from the fifth to the eighth, inclusive. The child voice as found in the upper grades is fully discussed in this class.

Mu 4 Practice Teaching

This course is open to students who have completed Mu 3. Each student will be given opportunity for practice teaching under supervision of the instructor.

Mu 5 and 6 Appreciation of Music

This course will include the history of music and current events, and the studying of the lives of the greatest composers in their relation to the development of the world's music. The instruments of the modern symphony orchestra will be studied separately and in various combinations, and a survey will be made of the historical development of the opera and oratorio.

Six credit hours

GLEE CLUB

The Glee Club is open to all students who can qualify. One hour-period a week is devoted to chorus singing and to instruction in the technical and interpretive elements of choral music.

PRIVATE LESSONS

In addition to a regular course taken by the student, individual instruction in piano and voice is given for which a fixed charge is made.

Philosophy and Social Science

PROFESSOR CROOKS

This Department, as now organized, offers introductory courses in the fields of Philosophy, Psychology, and Sociology. The purpose of these courses is, first, to give the student a working knowledge of the principles underlying these subjects, together with some historical background, and, second, to illustrate these principles by their application to certain fields of practical human interest.

Psy 1 Introductory Course. A survey course designed to give the student a general view of the important aspects of mental life and their relation to human behavior. Open to Sophomores, Juniors, and Seniors. [Omitted in 1923-1924].

Three credit hours

Psy 2 Applied Psychology. (Prerequisites: Psy 1, or its equivalent). A more intensive study of certain psychological problems, making use of the experimental method of investigation and emphasizing the applications of the facts learned.

Open to Sophomores, Juniors, and Seniors. [Omitted in 1923-1924].

Three credit hours

Phil 1 Introduction to Philosophy. The method of giving this course will be by a brief historical survey of the development of Philosophy, followed by a more detailed consideration of its major problems. Open to Juniors and Seniors.

Three credit hours

Phil 2 Ethics. This course will consider first the origin of customs, this being followed by a study of the types of theory concerning the moral standard. Emphasis will be put on the social applications of moral principles. Open to Juniors and Seniors.

Three credit hours

Phil 3 Logic. A study of elementary Logic, deductive and inductive, especial attention being given to the methods of science. A brief review of the modern developments of logical theory will be made at the end of the course. Open to juniors and seniors. [Omitted in 1923-1924].

Three credit hours

Phil 4 Contemporary Philosophy. (Prerequisite: Phil 1, or its equivalent). A study of the main philosophical tendencies of the present, such as the new Materialism, New Realism, Pragmatism, and Idealism. Open to Juniors and Seniors. [Omitted in 1923-1924].

Three credit hours

Soc 1 Introduction to the Study of Society. A survey of social origins, forces, laws, and aims, with the purpose of laying the foundation for the scientific study of practical social problems.

Three credit hours

Soc 2 Practical Sociology. A course dealing primarily with certain pathological conditions, their causes, significance to society, and possible means of improvement. Some of the problems considered are: poverty, crime, public health, dependents and defectives, child labor.

Three credit hours

Physical Education

MISS PARKHURST

The purposes of this department are (1) to develop in each student a responsibility for her health, and (2) to provide regulated exercise, posture training, and recreation.

Each student, upon entering college, is given a physical examination by a physician and the director of physical education, in order that individual corrective work may be substituted for the class exercises where necessary.

P 1 and 2 Required of Freshmen, three periods a week through the year. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter.

P 3 and 4 Required of Sophomores, three periods a week through the year. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter.

P 5 and 6 Special work, corrective exercises. Required of those who need this training. Periods to be determined by the director of physical education.

P 7 and 8 Dancing. Folk and national dancing, dance rhythms, and the fundamentals of classic dancing. Elective for Juniors and Seniors, one period a week from December 1 to April 1.

P 9 and 10 Required of two-year students in Education, three periods a week. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter. Also gymnastics, games, and rhythmic work for the school room and playground.

P 11 and 12 Required of two-year students in Education, three periods a week. Hockey, basket-ball, and other sports in the fall and spring. Indoor gymnastics, games, and folk dancing in the winter. Also training in the teaching of gymnastics, games, and folk dancing, for the school room and playground. An opportunity is given for practice teaching under the supervision of the instructor.

Physics

ASSISTANT PROFESSOR REES

General Physics is required in the Sophomore year of all students in Home Economics and is open for election to all others. The advanced and applied courses are given in alternate years and may be elected by students who have taken Ps 1 and 2, or by those who can satisfy the instructor of their fitness to profit by them. Ps 3 and 4 will be omitted in 1923-24.

Ps 1 and 2 General Physics. From this course the student should get a comprehensive and connected view of the entire field as well as a working knowledge of its laws in their industrial and household applications. One lecture, two recitations, and three laboratory hours. Laboratory fee, $2.50 a semester. Required of Sophomores in Home Economics.

Six credit hours

Ps 3 and 4 Advanced Physics. (Prerequisites: Ps 1 and 2). A more complete and detailed study of the important facts and principles of Physics. Individual investigation and experimentation aim to develop the student's power of a systematic inquiry into and a careful examination of her practical problems. One lecture, two recitation, and three laboratory hours. Laboratory fee, $2.50 a semester.

Six credit hours

Ps 6 Household Applications of Physics. (Prerequisites: Ps 1 and 2). Instruments and mechanisms commonly used in the household will be studied in the light of Physics; will be assembled, adjusted, and repaired in the laboratory and their relative advantages investigated. New devices, whose merits warrant their introduction to the modern home, will be considered. One lecture and five laboratory hours. Laboratory fee, $2.50.

Three credit hours

Physiology and Hygiene

Miss Calef and Miss Parkhurst

PH 1 and 2 Physiology and Hygiene. The object of this course is to give an understanding and appreciation of the general physiological processes of the human body, a knowledge of what constitutes health, and the reasons for the laws of hygiene. Some work in anatomy is included. Two lectures, one recitation, two laboratory periods a week through the year. Fee, $2.00 a term.

Six credit hours

PH 4 Hygiene and Sanitation. Personal and educational hygiene, the problems of school and community sanitation which concern the teacher, and the teaching of health principles through the grades. Required of two-year students in Education. Three periods a week.

Three credit hours

GENERAL INFORMATION

Registration

A reception committee appointed by the President of the Y. W. C. A. will receive students at Residence Hall as they arrive and will act as escorts while they complete their registration.

Registration proceeds as follows:

1 Students receive registration cards from the Secretary to the Dean.

2 The faculty adviser of each school, Arts and Science, Home Economics, or Education, explains the work of that school and assists the student in making out her program for the term.

3 Board and other charges should be paid at the Business Office.

4 Application for a key to the room assigned to the student should be made to the Director of Halls. The required deposit of fifty cents will be refunded upon the return of the key.

5 The registration card should be presented to each instructor for his signature at the first meeting of the class which the student enters.

6 To complete registration this card properly signed should be returned to the office of the Dean not later than Saturday of the first week of the term. Failure to complete registration on the day specified will make the student liable to a fine of one dollar per day until registration is completed.

7 Students should refer to the bulletin boards for special announcements.

TUITION, BOARD, ROOM, AND FEES

Tuition is free to students whose families reside in the State of Delaware.* The tuition for all other students is $50 per term or $100 per session.

	1st Term	*2d Term*	*Total*
Matriculation Fee (at entrance only)	$ 5.00		$ 5.00
Room-rent and Board	145.00	$145.00	290.00
Maintenance Fee	20.00	20.00	40.00
Infirmary‡	....	....	....
Total (Exclusive of Laboratory Fees)	$170.00	$165.00	$335.00
For non-residents add $100 for tuition			100.00
			$435.00

LABORATORY FEES

Laboratory fees vary according to the course taken and are as follows:

Bacteriology 1	$2.50	Chemistry 4	3.50
Biology 1	3.50	Chemistry 5	5.00
Biology 2	3.50	Chemistry 6	5.00
Biology 3	3.50	Chemistry 7	5.00
Biology 4	3.50	Chemistry 8	5.00
Biology 5	3.50	Chemistry 9	5.00
Biology 6	3.50	Chemistry 10	5.00
Biology 8	3.50	Chemistry 11	3.50
Biology 11	3.50	Chemistry 12	3.50
Chemistry 1	3.50	Home Economics 1	$2.50
Chemistry 2	3.50	Home Economics 2A	2.50
Chemistry 3	3.50	Home Economics 2B	2.50

*No person shall be considered eligible to register in the University as a resident of the State of Delaware unless she has resided in the State for the twelve months next preceding the date of proposed enrollment; and no person shall be considered to have gained residence in the State while a student of the institution, unless or until her parents move into the State and acquire bona fide residence there.

‡A fee of $1.00 per day is charged for attendance in the Infirmary.

Home Economics 4A	2.50	Home Economics 18	5.00
Home Economics 4B	2.50	Home Economics 22	1.50
Home Economics 5	5.00	Physics 1	2.50
Home Economics 6	3.00	Physics 2	2.50
Home Economics 9	5.00	Physics 3	2.50
Home Economics 10	5.00	Physics 4	2.50
Home Economics 11	2.50	Physics 6	2.50
Home Economics 15	5.00	Physiology and Hygiene 1	2.00
Home Economics 16	7.50	Physiology and Hygiene 2	2.00
Home Economics 17	1.50		

MATRICULATION

A matriculation fee of five dollars is required of all new students when they apply for admission. No application is recorded until this fee has been paid. Rooms in the dormitories are assigned to Freshmen in the order in which applications are recorded.

DIPLOMA

A diploma fee of ten dollars is charged each student before her graduation.

TUITION

Tuition is free to all students from the State of Delaware. The tuition for all other students is fifty dollars a term, or one hundred dollars for the year.

MAINTENANCE FEE

A maintenance fee of forty dollars is charged to all students, payable twenty dollars each term.

SPECIAL STUDENTS

Special students will be charged the regular laboratory fees for each course they enter. In addition they will pay five dollars for the first course and three dollars for each additional course.

BOARD AND ROOM

The charge for board and room is two hundred and ninety dollars per year, one hundred and forty-five dollars of which is to be paid on or before the day of registration, and one hundred and forty-five of which

is to be paid on or before the registration day of the second term.

Seniors, Juniors, and Sophomores are required to make a deposit of ten dollars before August first to secure the reservation of a room in the dormitory; the amount to be deducted from the sum paid for board at the time of registration in the fall. This fee will be returned in case a student is unable to enter college providing that notification is sent to the office of the Dean before September first of the year of entrance.

The Women's College reserves the right to require a dormitory room to be vacated at any time for cause; in which case a proportionate rebate of the sum paid will be made.

When rooms are voluntarily vacated during a term, the rent must be paid until the end of the term.

BREAKAGE

Each student of chemistry or bacteriology or biology is required to purchase a breakage card at a cost of three dollars; this card to be returned to the Business Office for the refund of any portion of this amount which may not have been used.

Reexaminations

A fee of $1.00 will be charged for each reexamination. A card showing that this fee has been paid must be obtained from the office and presented to the instructor in charge of the reexamination.

Student Self-Aid

Students are permitted to do such work as it is practicable to assign to them in the care of the buildings and in connection with the dining-room service, and are paid for this work at a fixed rate.

Scholarships

The Delaware Association of College Women offers a scholarship of $100 each year to the young woman

who passes the entrance examination given by the Academic Council of the Women's College of Delaware with the highest standing. She must be a resident of the State and physically as well as mentally fit for college life.

The State Board of Education offers scholarships of $150 per year to students taking the two-year course in education. The acceptance of such a scholarship obligates the student to teach one year in the elementary schools of Delaware for each year for which the scholarship is received.

Student Loan Fund

The object of The Student Loan Fund, which was established in 1915, is to help deserving students to obtain a college education. The fund is being raised by the Delaware State Federation of Women's Clubs and by individuals interested in the college. Students who borrow from this fund pay no interest while they are in college, but after leaving will be required to pay interest.

Scholarship Requirements

I Schedules of all students must be approved by the faculty adviser. Changes in schedules after the first week may be made only with the approval of the Academic Council.

II All applications for permission to change from one course to another must be signed by the applicant's parents or guardian and presented to the Scholarship Committee to be approved by the Academic Council before they become effective.

III No student may drop a course without first obtaining permission from her faculty adviser, to be reported to the Academic Council at the next meeting.

IV No student may enter in the first term later

than October 15, unless she has completed an amount of work equivalent to the work of the classes she proposes to enter.

V No regular student may carry less than 12 credit hours of work; no regular student may take more than the prescribed number of hours of work unless she has made a grade of "B" or better in at least four-fifths of the work which she undertook during the preceding term and has no conditions.

VI In order to be rated as a member of any class above the Freshman class, a student must have completed at least four-fifths of the work of the preceding year and have no conditions before that year.

VII A student, to remain in college, must pass at least 60 per cent of her total number of credit hours of term work, exclusive of Physical Training. In estimating this minimum requirement, one-half hour or less shall be disregarded; more than one-half hour shall be counted as one hour.

VIII On failure in a subject, a student may take one re-examination only. If a student does not remove a condition in any subject before that subject is again given in class, her grade will be considered E, and the subject must be repeated.

IX A student will be allowed to tutor in one subject only. Tutors are to be recommended by the head of the department.

X The system of grades is as follows:

A—90 or above

B—80 or above

C—70 or above

D—60 or above, and indicates failure redeemable by examination

E—Complete failure, the subject to be repeated in class.

Attendance

A student may be absent from class without excuse in one term as many times as the class meets per week. Absence of one full day or longer is excused on a doctor's certificate or by the person in charge of the health of students. Requests from parents that students be excused from college classes will not be granted. Upon exceeding the number of cuts allowed, a student is automatically dropped from the course. Cuts before and after vacation periods are not allowed. Such cuts shall be regarded as overcuts and the rule concerning overcuts shall be applied. A student who has been dropped from two courses, one of which may be physical education, is automatically dropped from college. A student who cuts herself out of any course in physical education is dropped from college. Deficiency in required work resulting from absence from class must be made up to the satisfaction of the instructor in charge.

Publications

The Blue Kettle, the first number of which was issued in December, 1921, is a quarterly periodical to which students contribute articles along the lines of their special interest.

The Blue and Gold published by the Junior Class gives the year's history of the activities of class and other organizations.

Organizations

The **Student Self-Government Association,** composed of all the members of the student body, has general charge of the maintenance of quiet and order in the halls. Under its supervision come practically all matters relating to the conduct of the student body. The student association aims not only to effect desirable results in student life, but at the same time to

furnish valuable training in business management and the art of leadership.

The **Students' Christian Association** is affiliated with the National Y. W. C. A. from which it receives much assistance in planning its work. The Association takes the responsibility of welcoming new students and assisting them with registration. Throughout the year it takes charge of the Sunday evening service and the mid-week religious conference. A large group of delegates is sent annually to the Summer Conference at Eaglesmere, Pennsylvania, where about seventy colleges located in the East-Central States are represented.

The **Dramatic Society** affords opportunity for the study of dramatic art and the allied arts of scene production and costume design. It admits all students to its membership.

The **Athletic Association** was organized to promote interest in sports. The various inter-class games, the award of honors for success in the different field day events, and all other athletic activities outside of those conducted by the Department of Physical Education are under its control.

The **Glee Club** is under the direction of the instructor of music and gives opportunity for the study of choral music by those who are interested in it and can qualify for admission. The club gives one concert each year.

The **Alumnae Association** of the Women's College was organized in 1918 immediately following the graduation of the first class. Students who do not complete the college course are admitted as associate members upon the graduation of the class with which they entered. The annual reunion is held at the college in February.

SUMMER SCHOOL FOR TEACHERS

SUMMER SCHOOL FOR TEACHERS

OFFICERS OF ADMINISTRATION

WALTER HULLIHEN, PH. D., D. C. L. *President of the University*
WILLIAM A. WILKINSON, A. M. . . . . *Director of Summer School*

Purpose

The six weeks' summer school, held each year at the University under the direction of the School of Education, is essentially a teachers' training school. The work offered includes courses in the common school branches, methods of teaching and other professional subjects, and a limited number of advanced courses. The primary purpose is to give teachers in service an opportunity to utilize a portion of the summer vacation in making further academic and professional preparation for their work. Special attention is given to the needs of rural and elementary teachers.

Admission

There are no examinations or other regular requirements for admission to the Summer School. All persons who hold a teacher's certificate or are planning to take the State Board examinations at the close of the session are eligible to attend. All other persons must satisfy the Director of the Summer School that they are able to pursue with profit the courses in which they wish to enroll.

College Credit

The program of studies of the Summer School is made up of three types of courses: (1) secondary school courses in English, History, Civics, etc., designed for teachers who need additional high school

preparation in order to qualify for a first grade teacher's certificate; (2) courses regularly given in the Women's College leading to the Elementary Teacher's Diploma; (3) courses leading to a college degree. For courses in group (1) no college credit is allowed. Courses for which credit is given follow:

For the Elementary Teacher's Diploma

Ed 14	The Teaching of Geography
Ed 16	Rural School Management
Ed 17	The Teaching of Arithmetic
Ed 23	The Teaching of English
Ed 26	The Teaching of Social Science
E 1	English Composition
FA 2	Appreciation of Art
FA 7	Drawing and Industrial Art
H 6	History of United States
Mu 1-2	Public School Music
Ph 4	Hygiene and Sanitation
Psy 32	Child Psychology
Soc 5	Rural Sociology

For a College Degree

E 1	English Composition
E 5	Literature: General Survey
E 9	Literature: Shakspere
H 6	History of United States
Psy 31	Psychology
Psy 32	Child Psychology
Soc 1	Introduction to Sociology

Session for 1923

The session for 1923 will be held from June 25 to August 3, inclusive. A special Summer School Bulletin is issued in April of each year. Copies of the Bulletin and any further information desired may be had from the Director of the Summer School.

REHABILITATION DIVISION

REHABILITATION DIVISION

Faculty

Charles Andrew McCue, S. B.	*Dean of Agriculture*
Raymond Melville Upton, M. S.	*Director of Rehabilitation*
	Farm Economics
Charles Raymond Runk, S. B.	*General Agriculture*
Claude E. Phillips, S. B.	*Assistant in General Agriculture*
Harold R. Ham, S. B.	*Instructor Foreman*
A. E. Tomhave, S. B.	*Animal Husbandry*
R. M. Koon, S. B.	*Horticulture*
A. E. Schaffle, S. B.	*Poultry*
George Buttles	*Physical Education*
Mary L. Powers	*Academic Department*
Ethel Brandt	*Academic Department*
Winifred S. Bach, A. B.	*Academic Department*
	Secretary
Ellen Crow	*Statistician*
Anna E. Falls	*Clerk*

The Division of Rehabilitation was established by the University of Delaware as a result of a request from the Veterans' Bureau for assistance in training disabled soldiers and sailors. Many former soldiers and sailors of the World War were incapacitated by gunshot wounds, shell shock, gas, amputations, and functional disorders. In many cases these disabilities were such as would prevent the men from following a trade or occupation. The United States Government is endeavoring to prepare these men for occupations in which their disability will be overcome by training, that they may "carry on" in life on an equality with their more fortunate comrades.

In April, 1920, the University was asked to assist in the work of rehabilitation by throwing open its doors to ex-service men for training in agriculture. A plan was arranged by which agricultural training could be given Rehabilitation students without adding finan-

cial burden to the University. This plan was approved by the University trustees and the Rehabilitation Division of the School of Agriculture was opened on May 3, 1920. Owing to the fact that the University offers no two-year course in Agriculture, and that a large proportion of the men received for training had had but limited educational advantages, it was deemed best to establish separate courses with a special corps of instructors.

Purpose of Rehabilitation Division

Each student is offered an opportunity to pursue a course in Vocational Agriculture. The Rehabilitation course is similar to the two-year course being offered by other agricultural colleges, but it has been made very flexible to allow enrollment of new students at any time. Prevocational Unit courses are offered for those insufficiently prepared. The same courses, usually outlined according to seasonal sequence, are offered every year. The course of training given prepares men to start farming for themselves or for others and also opens a wide field in occupations closely allied to agriculture.

Facilities

The Rehabilitation Division uses the buildings, farm, and classrooms of the University, the schedule of the work being so arranged that the regular University routine is not disturbed. In so far as possible the laboratory and farm equipment of the University is placed at the disposal of the Rehabilitation students. A new building has been erected which includes a club room, four classrooms, three offices, a study room, and laboratory for the exclusive use of the Rehabilitation Division in addition to the facilities loaned by the University.

A thoroughly equipped, up-to-date poultry plant,

with a capacity for twelve hundred laying hens, is owned by the division. There are also five acres (possibly five more will be added), a small packing shed, a canning kitchen, and a small greenhouse, which are available for instruction in Horticulture. The Division has also the entire use of a neighboring seventeen-acre orchard. The Farm Engineering Department has $3000 worth of the latest farm machinery, including gas engines and tractors. Thirty-four acres have been rented for the growing of general crops under special direction of the Farm Practice Department.

Terms of Study and Credits

There are three terms in the Rehabilitation school-year: October to February, February to June, and June to October. Minimum credits in addition to Farm Labor and Physical Training are 14 for each of the first two terms, and 12 for the Summer Term.

Requirements for Admission

The only men admitted are those who are proven eligible for training by the Veterans' Bureau and are sent by them to the University of Delaware. No men below fifth grade standard will be accepted.

Major Agricultural Objectives

General requirements

1 Several prearranged trips to surrounding districts (Twenty-five dollars allowed per annum for each man for transportation on educational trips)

2 Projects

3 Farm practices and other requirements of Farm Practice Department

4 Completion of all the requirements of the Academic Department

5 Activities outlined in the Department of Physical Education

6 Seventy agricultural credits in the major department elected.

Students majoring in any one of the main agricultural subjects, General Agriculture, Horticulture, Animal Husbandry, and Poultry, are given required courses totalling 70 agricultural credits, and may choose additional electives. All credits in courses of instruction are term-hour credits.

GEN. AGRIC.		HORT.		A. H.		POULTRY	
Course	Credit	Course	Credit	Course	Credit	Course	Credit
1 C	4	1 Hort.	3	1 AH	3	1 P	3
2 C	3	2 Hort.	3	2 AH	4	2 P	3
1 S	4	3 Hort.	3	3 AH	3	3 P	3
2 S	3	4 Hort.	4	5 AH	3	4a P	1
1 AE	3	5 Hort.	3	6 AH	4	4b P	1
2 AE	3	6 Hort.	3	7 AH	3	5 P	1
3 AE	3	7 Hort.	3	8 or 9 AH	2	6 P	3
1 Ec	3	8 Hort.	3	12 AH	3	7 P	3
2 Ec	3	9 Hort.	3	7 FE	1	8 P	3
3 Ec	3	10, 11, or 12	2	1 P	3	9 P	3
7 FE	1	7 FE	1	1 Hort.	3	10 P 1 or	2
GA Sem.	3	F. Prac.	3	1 C	4	11 P 1 or	2
F. Prac.	3	1 S	4	1 S	4	7 FE	1
1 AH	3	1 C	4	1 Ec.	3	1 Hort.	3
2 AH	4	1 AH	3	F. Prac.	3	1 AH	3
1 Hort.	3	1 P	3	Proj. tr.	12	1 S	4
1 P	3	1 Ec.	3	Elec.	12	1 C	4
Proj. tr.	12	Elec.	7		—	1 Ec.	3
Elec.	6	Proj. tr.	12	Total	70	Proj. tr.	12
	—		—			Elec.	11
Total	70	Total	70			F. Prac.	3
							—
						Total	70

Yearly Program of the Rehabilitation Course

From this list each man's complete program of courses is made.

	AH		Soils			Farm Ec.		Agric.		Eng.	Poultry		Hort.		Bees		F. P.		Eng.		Math.		Phys E	
Fall	1 AH	3	1 S	4	3 FC	1 Ec.	3	1 AE	3		1 P	3	1 H	3	1 B	3	1 FP		1 E	4	1 M	4		
	2 AH	4	3 S			2 Ec.	3				2 P	3	2 H	3	2 B	2			2 E	4	4 M	4	2 hr.	
	3 AH	3				5 Ec.	3				3 P	3	7 H	3					3 E	4				
											10 P		10 H	2										
											11 P													
Spring	5 AH	3	2 S	3	1 FC	1 Ec.	3	3 AE	3		1 P	3	4 H	4	1 B	3	1 FP		1 E	4	1 M	4	2 hr.	
	6 AH	4	3 S			2 Ec.	3				4a P	1	6 H	3	2 B	2			2 E	4	2 M	4		
						3 Ec.	3				4b P	1	1 H	3					3 E	4	3 M	4		
											5 P	1	3 H	3							4 M	4		
											6 P	3												
Summer	1 AH	3	1 S	4	2 FC	4 Ec.	3	2 AE	3		1 P	3	5 H	3	1 B	3	1 FP		1 E	4	1 M	4	2 hr.	
	7 AH	3			3 FC	1 Ec.	3				7 P	3	8 H	3	2 B				2 E	4	2 M	4		
	12 AH	3									9 P		9 H	3					3 E	4	3 M	4		
	8 AH	2									8 P	3	11 H	2										
	9 AH	2											12 H	2										

FE 7 is offered every term under every major course. One credit. The foregoing courses are repeated every year with the addition of some regular University courses. Seminars are offered when the need arises.

SUBJECTS OF INSTRUCTION

General Agriculture

Farm Crops

Farm Crops 1 Field Crop Production. Varieties, culture, improvement of cereal and forage crops. Three hours discussion and two hours field study.

C. E. PHILLIPS *Four credit hours*

Farm Crops 2 Crop Diseases and Insects. (Prerequisite: Farm Crops 1). Field identification and practical control. One hour class discussion and four hours field work.

C. E. PHILLIPS *Three credit hours*

Farm Crops 3 Seminar. (Prerequisite: F C 1 and 2). Advanced study along chosen lines.

C. E. PHILLIPS *Credits to be arranged*

Soils

Soils 1 Elementary Soils. Elementary study of soil fertility. Three hours classroom discussion and two hours of field practice.

C. R. RUNK *Four credit hours*

Soils 2 Soil Fertility and Crop Production. (Prerequisite: Soils 1). Three hours of classroom discussion and two hours of field study.

C. R. RUNK *Three credit hours*

Soils 3 Seminar. (Prerequisites: Soils 1 and 2). Advanced study along chosen lines.

C. R. RUNK *Credits to be arranged*

Agricultural Engineering

Ag Eng 1 Farm Equipment.

A. Farm Equipment—One half term. Elementary principles of mechanics and study of farm machinery.

B. Farm Buildings—One half term. The planning and construction of farm buildings and their equipment.

Two hours of class discussion and two hours of field practice.

C. R. RUNK *Three credit hours*

Ag Eng 2 Drainage and Concrete Construction.

A. The principles of drainage and laying out of drainage systems. One half term.

B. Use of concrete materials, mixing and construction. One-half term.

Two hours of class discussion and two hours field practice work.

C. R. RUNK *Three credit hours*

Ag Eng 3 Farm Power. (Prerequisites: Ag Eng 1 and 2). Study of construction and uses of gasoline engines and tractors. Two hours class study and two hours of field practice.

C. R. RUNK *Three credit hours*

Ag Eng 4 Seminar. Study and trips.

C. R. RUNK *Credits to be arranged*

Farm Economics

Farm Ec 1 Agricultural Economics. Elementary economics and relation of land, labor, and capital. Thesis.

R. M. UPTON *Three credit hours*

Farm Ec 2 Farm Accounts. A simple system of farm bookkeeping. One class hour and four laboratory hours.

C. E. PHILLIPS *Three credit hours*

Farm Ec 3 Farm Management. (Prerequisite: Farm Ec 2). Organization and management of the farm business. Two hours class discussion and assigned individual farm managements problems.

C. E. PHILLIPS *Three credit hours*

Farm Ec 4 Marketing of Farm Products. (Prerequisite: F Ec 1). Marketing, crop geography, prices, distribution, and cost. Thesis. Three class hours.

R. M. UPTON *Three credit hours*

Farm Ec 5 Co-operation, Co-operative Marketing, and Credit. Modern co-operation and credit. Thesis. Three class hours.

R. M. UPTON *Three credit hours*

Farm Ec 6 Seminar. (Prerequisites: F Ec 1, 4 and 5, or 2 and 3). Special Study along chosen lines.

R. M. UPTON *One or two credit hours*

Farm Ec 7 Seminar. Budgeting. Analysis, or forecast of the probable expenses and income month by month of various business enterprises, taught as a seminar in each major department.

C. R. RUNK General Agriculture *One credit hour*
A. E. SCHAFFLE Poultry
R. M. KOON Horticulture
A. E. TOMHAVE Animal Husbandry

Horticulture

Hort 1 Elementary Horticulture. Foundation course in general horticulture. One two-hour practicum and two lessons.

R. M. KOON *Three credit hours*

Hort 2 Plant Growth. (Prerequisite: Hort 1). Elements of Botany applied to Horticulure. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 3 Small Fruits. (Prerequisite: Hort 1). Propagation, planting, and subsequent care of small fruit plantation. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 4 Vegetable Gardening. (Prerequisite: Hort 1). Hotbeds, cold frames, planting, culture, and other practices in seasonal sequence. One lesson and two two-hour practicums.

R. M. KOON *Four credit hours*

Hort 5 Commercial Vegetable Gardening. (Prerequisite: Hort 1 and possibly Hort 4). Continuation of Hort 4, dealing with care of vegetable gardens. One lesson and two two-hour practicums.

R. M. KOON *Three credit hours*

Hort 6 Pruning, Plant Propagation, and Spraying. (Prerequisite: Hort 1). A practical course in the stated subjects. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 7 Commercial Horticulture. (Prerequsite: Hort 1, 4, and 5 desirable). Care of the fall garden and orchard harvesting. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 8 Orchard Care and Management. (Preceded or accompanied by Hort 1). Summer cultural practices in orchard and fruit plantation. Two lessons and one two-hour practicum.

R. M. KOON *Three credit hours*

Hort 9 Horticultural Manufacture. (For advanced students). Principles and practices in preservation of horticultural products. One lesson and one three-hour practicum.

R. M. KOON *Three credit hours*

Hort 10, 11, 12 Seminar. Advanced study of special problems. One two-hour period.

R. M. KOON *Two credit hours*

Animal Husbandry

AH 1 Elementary Animal Husbandry. Common facts concerning types and breeds, feeds and feeding, care and management. Two lessons and one two-hour practice period.

A. E. TOMHAVE *Three credit hours*

AH 2 Feeds and Feeding. (Preceded or accompanied by AH 1). Nutrition of farm animals, the origin, composition, preparation, and value of feed stuffs. Two lessons and two two-hour laboratory periods.

A. E. TOMHAVE *Four credit hours*

AH 3 Types and Breeds of Livestock. (Preceded or accompanied by AH 1). Origin, history, development, and characteristics of swine, horses, sheep, and cattle. One class hour and two two-hour judging periods.

A. E. TOMHAVE *Three credit hours*

AH 5 Types and Market Classes of Livestock. (Preceded

or accompanied by AH 1, preceded by AH 3). Characteristics of types and market classes of livestock. Advanced judging. One lesson and two two-hour farm practice periods.

A. E. TOMHAVE *Three credit hours*

AH 6 Dairying. (Prerequisite: AH 1). Standardizing, testing, modifying, separation, and classification of milk. Two lessons, one three-hour practice period.

A. E. TOMHAVE *Four credits*

AH 7 Livestock Management. (Prerequisite: AH 1). Care and management of all livestock excepting dairy cattle. Two lessons and one two-hour farm practice period.

A. E. TOMHAVE *Three credit hours*

AH 12 Milk Production. (Prerequisite: AH 1). Milk production, care, feeding, and management of dairy cattle.

A. E. TOMHAVE *Three credit hours*

AH 8, 9 Seminar. Advanced study along special lines. Two one-hour periods for discussions and outside work under supervision.

A. E. TOMHAVE *One, two, or three credits*

Poultry Husbandry

Poultry 1 Elementary Poultry Keeping. Complete elementary survey. Foundation course. Two lessons and one two-hour farm practice period.

Three credit hours

Poultry 2 House Construction and Design. (Prerequisite: P 1). Planning, arranging, designing poultry houses, foundation plans and construction. Two lessons and one practice period on plant.

A. E. SCHAFFLE *Three credit hours*

Poultry 3 Poultry Judging. (Preceded or accompanied by Poultry 1). History, classification of breeds, judging fancy and utility points.

A. E. SCHAFFLE *Three credit hours*

Poultry 4a Incubation. (Preceded or accompanied by P 1).

Setting up of machinery and operation, testing eggs, keeping records. Three short periods a day.

A. E. SCHAFFLE *One credit hour*

Poultry 4b Brooding. (Preceded or accompanied by P 1). Managing a brooder of chicks, keeping records of temperatures, growth and food. Three short periods a day.

A. E. SCHAFFLE *One credit hour*

Poultry 5 Flock Management. (Preceded or accompanied by P 1). Egg production, fattening, record keeping. Three short periods a day.

A. E. SCHAFFLE *One credit hour*

Poultry 6 Marketing. (Preceded or accompanied by P 1). Preparation of poultry and eggs for market, storage, preservation. Two lessons and one two-hour practice period.

A. E. SCHAFFLE *Three credit hours*

Poultry 7 Poultry Diseases. (Preceded or accompanied by P 1). Prevention and cure of diseases of poultry. Three lessons.

A. E. SCHAFFLE *Three credit hours*

Poultry 8 Poultry Farm Management. (Preceded or accompanied by P 1 to 7). For students specializing in Poultry Husbandry. Two lessons and one two-hour practice period.

A. E. SCHAFFLE *Three credit hours*

Poultry 9 Seminar. (Preceded by Poultry 1 to 8 inclusive). Special problems in poultry husbandry. One lesson.

A. E. SCHAFFLE *One or two credit hours*

Poultry 10 Seminar. (Preceded by Poultry 1 to 9 inc.). Continuation of Poultry 9.

A. E. SCHAFFLE *One or two credit hours*

Poultry 11 Research. Original investigation in poultry husbandry and thesis.

A. E. SCHAFFLE *Three credit hours*

Bee-Keeping

Bee-Keeping 1 Introduction to Principles of Bee-Keeping. Essential features of care of bees. Two lessons and one two-hour practice period.

H. R. HAM *Three credit hours*

Bee-Keeping 2 Advanced study of life and care of bees. Three hours.

H. R. HAM *Two credit hours*

Farm Practice

Four hours a week on the University and surrounding farms until the student has shown his ability to carry on certain fundamental farm practices and also those peculiar to his major course. Each major department has a definite list to be completed. This is in addition to experience gained in the practice period with each course. Required of all students.

H. R. HAM *Three credit hours*

Physical Education

Athletic and mass games. Required of all students.

GEO. BUTTLES *Two periods a week*

ACADEMIC DEPARTMENT

English

Eng 1 Elementary Practical English in relation to agriculture. Four class hours.

MISS ETHEL BRANDT *Four credit hours*

Eng 2 This course is a continuation of course 1. Four class hours.

MRS. R. B. HARRIS *Four credit hours*

Eng 3 Sufficient drill in grammar and composition, notebook outlining, etc., to enable a student successfully to carry

the study in his advanced agricultural courses. Oral composition especially emphasized.

MISS MARY L. POWERS *Four credit hours*

Eng 4 Seminar in literature and college entrance English. Given upon request.

MISS MARY L. POWERS *Two credit hours*

Mathematics

Math 1 Farm Arithmetic. Thomas's "Rural Arithmetic". Four hours a week.

ETHEL BRANDT *Four credit hours*

Math 2 Farm Arithmetic. (Prerequisite: Math 1). Continuation of Math. 1. Four hours a week.

WINIFRED S. BACH *Four credit hours*

Math 3 Farm Arithmetic. (Prerequisites: Math 1 and 2). Problems in Burkett and Swartzel's "Farm Arithmetic." Four hours a week.

MARY L. POWERS *Four credit hours*

Math 4 and 5 College Entrance Mathematics. Elementary Algebra and Plane and Solid Geometry. Preparation for University examinations.

CARL J. REES, special tutor *Four credit hours*

For other courses not outlined and yet open to the more advanced students by special permission, see the catalogue of the four-year University courses and catalogue of the Summer School.

In addition to the courses outlined above each member of the Academic Faculty has scheduled one conference a week, when by appointment, men may receive assistance.

EXPENSES OF THE DIVISION

Tuition, books, and supplies are furnished at the expense of the U. S. Government.

Board in the dining-hall of University, per week	$6.25
Room, per week, at private homes, about	3.00

OTHER INFORMATION

The University rules governing general conduct and grades apply to Rehabilitation men.

A Rehabilitation student serves on the staff of the University Review, which gives news of student activities. It is desired that students subscribe to this publication.

The National soldiers' organizations, to which the students belong, aid in their social affairs. There is an Alumni mailing list so that news letters are sent to former students.

STUDENTS IN ATTENDANCE 1922-1923

DELAWARE COLLEGE

Abbreviations: A. & S., Arts and Science; A., Agriculture; C. E., Civil Engineering; M. E., Mechanical Engineering; E. E., Electrical Engineering; Ch. E., Chemical Engineering; E., Engineering not specified.

GRADUATE STUDENTS

Allen, Alvan	Chemistry	Wilmington
Baker, Henry Raymond	Bacteriology	Newark
Blumberg, Leo	Engineering	Wilmington
Cameron, Raymond Mearns	Education	North East, Md.
Clark, Joy Harold	Horticulture	Newark
Ham, Harold Rudman	Animal Husbandry and Dairying	Newark
Koon, Ray Milton	Plant Pathology	Newark
Lindell, William Francis	Engineering	Newark
Lukens, Arthur Lewis	Education	Wilmington
Pence, Merville Oleo	Agronomy	Newark
Phillips, Claude Ellis	Agronomy	Newark
Runk, Charles Raymond	Agronomy	Newark
Schaffle, Albert Eberhard	Education	Newark
Sutfin, Charles Ide	Education	Newark
Tomhave, Arthur Edward	Animal Husbandry	Newark

SENIOR CLASS

Bamberger, Charles Augustus, Jr.	A. & S.	Wilmington
Barnard, Edward Reynolds	M. E.	Wilmington
Betty, Clifford Alexander	E. E.	Wilmington
Betty, Robert, Jr.	E. E.	Montchanin
Boyce, Willard Davis	A. & S.	Cheswold
Brandt, Earl DeWitt	Ch. E.	Camden, N. J.
Brown, John Wilmot	A. & S.	Wilmington
Burnite, Alvin Warrington	M. E.	Wilmington
Carr, Albert Edwin	A.	Wilmington
Carter, Herbert Hilder	E. E.	Edgemoor
Challenger, John Franklin	E. E.	Claymont
Cole, Harry Richardson	A. & S.	Dover
Cook, Herman Wallace	A.	Newark
Cooper, Ezekiel, Jr.	A. & S.	New Castle
Crawford, Howard Favorite, Jr.	M. E.	Wilmington
Crothers, Wesley Gifford	A. & S.	North East, Md.

Cummings, Courtney Hampton	A. & S.	Newark
Devitt, Daniel Edwin	A.	Georgetown
Draper, Henry Carlton	A. & S.	Milton
Elliott, James Grayson	A. & S.	Delmar
Else, Frank	A.	Philadelphia, Pa.
Ewing, William Moffitt	M. E.	West Grove, Pa.
Fletcher, Northrop Rogers	M. E.	Wilmington
Fockler, Edwin Benjamin	A. & S.	North East, Md.
France, John Butz	C. E.	Wilmington
Gallo, Anthony James	A. & S.	Wilmington
Gilbert, Walter Mairs	A.	Spring City, Pa.
Goffigon, Oliver Winfield	M. E.	Marionville, Va.
Grier, William Humes	A. & S.	Milford
Hahn, James William	A.	Philadelphia, Pa.
Hawke, LeRoy Francis	E. E.	Wilmington
Howard, Charles Wooster	A. & S.	Salisbury, Md.
Linn, Gordon Lee Ernest	E. E.	Wilmington
Lund, Harold Mayne	A. & S.	Landenberg, Pa.
Lynch, John Mitchell	A.	Lewes
McGovern, John Joseph	C. E.	Wilmington
McManus, George Bright	A.	Wilmington
Murphy, Jay Edward	A. & S.	Milford
Murray, John Joseph	C. E.	Wilmington
Nutter, Charles Armel	A. & S.	Milford
Patton, Joseph Leslie	E. E.	Wilmington
Peirce, Edgar Herbert	A.	Embreeville, Pa.
Pitman, Edwin Price	C. E.	Delanco, N. J.
Pyle, Theodore Howell	A. & S.	Wilmington
Reynolds, Charles Willard	M. E.	North East, Md.
Robinson, Granville Stott	A. & S.	Newark
Rose, Edgar Newman	A. & S.	Newark
Rowan, Frederick Johnson	A. & S.	Newark
Stewart, Eugene Lyman	A. & S.	Baltimore, Md.
Strickler, Frank Downing	A. & S.	Wilmington
Thielman, Joseph Anthony	E. E.	New Castle
Viohl, Herbert Kurt Wetherell	M. E.	Wilmington
Wade, Charles Norman	A. & S.	Wilmington
Webb, John Loud	E. E.	Wyoming
Wells, John Murphy	E. E.	Wilmington
Wintrup, Joseph Paul	A. & S.	Wilmington
Wise, Carl Thomas	A. & S.	Wilmington
Woodward, James Dilworth	A.	Wilmington
Yost, Howard Beidleman	E. E.	Wilmington

JUNIOR CLASS

Akin, Merwyn Appleton	A. & S.	Joplin, Mo.
Barker, Henry Shurtleff, Jr.	A.	Lansdowne, Pa.
Breuninger, George Biddle	A. & S.	Philadelphia, Pa.

Chun, Kan Leung	A. & S.	Honolulu, T. H.
Clift, Harold William	E. E.	Wilmington
Corkran, Howard Leroy	A. & S.	Wilmington
Donaldson, James Harmer	A. & S.	Wilmington
Downing, Clarence Burwick	M. E.	Milford
Elliott, Isaac Stidham	A. & S.	Wilmington
Foster, William Richard	C. E.	Trenton, N. J.
Frear, Joseph Allen, Jr.	A.	Wyoming
Grier, Albert Oliver Herman, Jr.	M. E.	Wilmington
Hall, Gerald Charles	A. & S.	Wilmington
Herman, George Robert	A.	Newtown Square, Pa.
Hoey, Edwin Anderson	M. E.	Dover
Houghland, Geoffrey V. C.	A.	Brooklyn, N. Y.
Howard, William Edwards, Jr.	A. & S.	Salisbury, Md.
Jackson, Edward Henry	E. E.	Principio Furnace, Md
Johnson, Haywood Edward	C. E.	Philadelphia, Pa.
Johnson, Marriott Conrad	Ch. E.	Lansdowne, Pa.
Magaw, Everett Lewis	C. E.	Marshallton
Manning, William Reynolds	M. E.	Wilmington
McClure, Howard Richard	M. E.	Wilmington
MacDonald, Harvey Forsythe	A. & S.	Philadelphia, Pa.
McWhorter, Purnal Lynch	Ch. E.	Middletown
Mendenhall, William Kenneth	A. & S.	Hockessin
Mortimer, John Edwin	Ch. E.	Wilmington
Murray, Charles Winston	A. & S.	Wilmington
Nicholson, John Reed, Jr.	E. E.	Wilmington
Nunn, Horace Alfred	A.	Milford
Owens, Paul Dempster	E. E.	Perryville, Md.
Price, Clifford Banks	A. & S.	Harrington
Schaefer, John Henry	Ch. E.	Wilmington
Shockley, Wilbur Saulsbury	A. & S.	Millsboro
Smith, Clifford Asbury	A. & S.	Wilmington
Smith, Eugene Morris	E. E.	Elsmere
Smith, Frederick Benson	A. & S.	Wilmington
Smyth, James Elbert	A.	Wilmington
Tempone, Vincent	A. & S.	Philadelphia, Pa.
Tilghman, James Edwin	A. & S.	Cape Charles,Va.
Vansant, Franklin Taylor	M. E.	Wilmington
Williams, John Davidson	A. & S.	Newark
Willis, George Eisler	E. E.	Wilmington
Winters, Ralph Nicholas	E. E.	Ocean City, N. J.

SOPHOMORE CLASS

Armstrong, Paul Arunah	A. & S.	Newark
Blest, Charles Paul	A. & S.	Newark
Bradfield, Frank Leslie	C. E.	Wilmington
Cann, Roger Walcott	E. E.	Camden, N. J.
Conly, Robert Wier	E. E.	Edgemoor

Connell, Leo Francis	C. E.	Wilmington
Crew, Leonard	A. & S.	Wilmington
Crothers, Kenneth Janney	A.	North East, Md.
Cummings, Francis Joseph	A. & S.	Wilmington
Daniels, Harold Leroy	M. E.	Penns Grove, N. J.
Davis, Robert Brandon	A. & S.	Newark
Deputy, James Hudson	A.	Milford
Donaldson, William McCoy	Ch. E.	Wilmington
Dougherty, David Mitchell	A. & S.	Wilmington
Fisher, Augustus Moody	A. & S.	Dover
Fox, Raymond Albee	A.	Newark
France, Ralph Lyle	A. & S.	Wilmington
Garatwa, Frank Ira	A. & S.	Newark
Gibson, Charles Whitney	A. & S.	Wilmington
Gill, Charles Edward	A. & S.	Georgetown
Givan, Kenneth Day	C. E.	North East, Md.
Gradwohl, Franz Kolk	E. E.	Wilmington
Green, Charles Earl	A. & S.	Wilmington
Green, Peter Ayars	Ch. E.	Wilmington
Hanby, Henry Garrett	A. & S.	Holly Oak
Harley, Allen Gottwals	A.	Newark
Hastings, Minos Francis, Jr.	A.	Delmar
Hatfield, Wilson Carlisle	A.	Greenwood
Hedger, Frank Howard	Ch. E.	Wilmington
Helmbreck, Earl James	A.	Newark
Hoch, Ralph Keller	A. & S.	Woodside
Hoffecker, John Savin	A. & S.	Newark
Houghton, Frederick Courtland	A. & S.	Newark
Hunt, Russell Passmore	C. E.	Aldan, Pa.
Hurff, Howard Conover	A.	Elmer, N. J.
Ickler, Herbert	C. E.	Philadelphia, Pa.
Jackson, Harry Richardson	A. & S.	Dover
Jackson, William Spencer	A. & S.	Dover
Jaggard, LaBarre Leamy	Ch. E.	West Berlin, N. J.
Jones, Ralph William	C. E.	Wilmington
Jones, Richard Alda	A.	Woodside
Kirk, Herbert Piper	C. E.	Wilmington
Krewatch, Albert Victor	E. E.	Delmar
Lank, Herbert Hayman	A. & S.	Seaford
Lank, William Jefferis	E. E.	Wilmington
Leach, John Gilbert	A. & S.	New Castle
Long, Richard Grant	A. & S.	Smyrna
Lovell, Francis	E. E.	Wilmington
Lowber, Harrie Campbell	A.	Dover
Mather, Irwin Emerson	E. E.	Kansas City, Mo.
McCormick, Elmer Charles	A. & S.	Bridgeport, N. J.
McKelvie, William David	A.	Kennett Square, Pa.
MacMurray, John, Jr.	C. E.	Newark
Milliken, Ernest Hamilton	A.	Porters

Miller, Francis Grove	A. & S.	North East, Md.
Muhlig, John Robert	M. E.	Wilmington
Mullineaux, Frederick	M. E.	Wilmington
Naughton, John James	A. & S.	Philadelphia, Pa.
Neide, James Francis	C. E.	Yorklyn
Pikus, Harry	M. E.	Dover
Reitzes, Herman	A. & S.	Wilmington
Rinard, Paul Robert	A. & S.	Wilmington
Seitz, George Hilary, Jr.	Ch. E.	Gordon Heights
Shaw, Paul Albert	A. & S.	Wilmington
Shuster, George Murray	E. E.	Elkton, Md.
Siegrist, Ralph Smith	E. E.	Wilmington
Skewis, John Paul	A.	Milford
Snyder, John Cedric	A. & S.	Georgetown
Spaid, Charles Dalny	A. & S.	Dover
Steel, Paul Pié	A. & S.	Newark
Tilghman, Cornelius Alfred	A. & S.	Smyrna
Turner, Alfred Hayes	E. E.	Wilmington
Turner, Thomas Russell	A. & S.	Wilmington
Walker, John Winston	A. & S.	Wilmington
Warner, Francis Reybold	M. E.	Delaware City
Wier, William Jefferson	A. & S.	Wilmington

FRESHMAN CLASS

Abbott, John Nelson	E. E.	Wilmington
Allman, Joseph	A. & S.	Wilmington
Ash, John Thomas, Jr.	A. & S.	Haddonfield, N. J.
Ashby, Rulon Sanford	E. E.	Wardtown, Va.
Atkins, Raymond Reed	A. & S.	Lewes
Barkley, Francis Warren	M. E.	Wilmington
Baxter, William Paul	C. E.	Wilmington
Beck, Preston Kent	E. E.	Delaware City
Berry, Edward Burke	Ch. E.	Meriden, Conn.
Betts, Isaac Watson	A. & S.	Frederica
Blackstone, John P. F.	A. & S.	Georgetown
Bleiberg, Isadore	A. & S.	Wilmington
Boines, George James	A. & S.	Wilmington
Brittingham, Walter Lee	E. E.	Laurel
Bullock, Arlington Porter	E. E.	Harrington
Cannon, Joseph Wallace	E. E.	New Castle
Cannon, William Nelson	A.	Cannon
Carey, James Burton	E. E.	Georgetown
Carlon, William Phillips	M. E.	Wilmington
Carpenter, Carlisle Bradford	E.	Wilmington
Carroll, William Joseph	C. E.	Wilmington
Cathcart, David Courtney	C. E.	Wilmington
Chalfant, Jefferson David, Jr.	Ch. E.	Wilmington
Cherpak, Joseph Michael	A. & S.	New Britain, Conn.

Cloward, Thomas McDonough	E.	Perryville, Md.
Cohen, Herman	A. & S.	Wilmington
Collins, Vaughan Smith	C. E.	Frankford
Collison, Norman Harold	A.	Bridgeville
Craig, Lamborn Lee	A. & S.	Wilmington
Crooks, Harold James	E. E.	Wilmington
Curry, Thomas Clayton	C. E.	Bridgeville
Davis, Jesse Clyde	A. & S.	Newark
Draper, William Henry	E. E.	Wyoming
Dutcher, Wallace George	C. E.	Wilmington
Edler, Charles Philip	C. E.	Mt. Cuba
Evans, Owen	M. E.	Cheswold
Ewing, Marvin Lester	A. & S.	Wilmington
Eyer, Alfred Warner	A. & S.	Felton
Felt, Carle Lee, Jr.	A.	Philadelphia, Pa.
Frazier, Maurice Alvin, Jr.	M. E.	Dover
Garbutt, Ira Allman, Jr.	E. E.	Frederica
Gass, Henry Link	E. E.	Marshallton
Graham, James Wilson, Jr.	A. & S.	Wilmington
Grant, James William	A. & S.	Wilmington
Grant, Kenneth Albert	A. & S.	Wilmington
Gregg, Ralph Winfield	A. & S.	Lewisville, Pa.
Groves, Edward Jones	E. E.	Wyoming
Gum, George Massey	E. E.	Frankford
Haitsch, LeRoy Martin	C. E.	Wilmington
Hanson, Albert Murray	A. & S.	Claymont
Hayes, Robert Owen	C. E.	Newark
Heinold, Ralph	Ch. E.	Wilmington
Hill, William Rust	A.	Bridgeville
Hobbs, Alton Russell	E. E.	Georgetown
Hoey, Waldo Orville	Ch. E.	Frederica
Hoffman, Sydney	A. & S.	Newark
Houk, Merton H.	A. & S.	Doylestown, Pa.
Hudson, Arthur Robert	A. & S.	Selbyville
Jacobson, Louis	C. E.	Wilmington
Johnson, Robert D.	A. & S.	Lansdowne, Pa.
Jones, Clifton Eber	E. E.	Wilmington
Jones, John Casper	A. & S.	Georgetown
Jones, Richard Leonard	C. E.	Wilmington
Jones, Thomas Malcolm	A. & S.	Newark
King, Charles Sidney, Jr.	E. E.	New Castle
King, Harry Leon	C. E.	New Castle
King, James Craig, Jr.	A. & S.	New Castle
Koppel, Alexander	A. & S.	Wilmington
Kramer, Lewis Hayman	C. E.	Wilmington
Ladd, Harold Orsemus	A. & S.	Wilmington
Leahy, Paul	A. & S.	Wilmington
Leary, Francis Dennis	E. E.	Wilmington
Levy, Charles	A. & S.	Wilmington

Lewis, John Edwin	A. & S.	Dover
Livermore, William Clyde	C. E.	Bellefonte
Long, Darrell Furman	A.	Selbyville
Lord, William Paul	A. & S.	Greenwood
Lynch, Cecil Cameron	Ch. E.	Wilmington
Mannix, James Laurence	A. & S.	Laurel
Marshall, James West	A.	Lewes
Marvil, James Edward	A. & S.	Laurel
Maucher, James Willard	A. & S.	Wilmington
Maxwell, Charles Emerson	A. & S.	Wilmington
Mayer, John Frank	A.	Newark
McCabe, Arthur Lee	Ch. E.	Selbyville
McCabe, Harley King	A. & S.	Frankford
McCoy, Habbart Koons	A. & S.	St. Georges
McGovern, Raymond James	C. E.	Wilmington
McVaugh, Henry Black	E.	Hockessin
Messick, Harrington Sines	A. & S.	Bridgeville
Miller, Julian Morris	A. & S.	Wilmington
Miller, William Baker	A. & S.	Seaford
Monigle, Arthur Patrick	A. & S.	Wilmington
Murray, Fred Asher	E. E.	Selbyville
O'Donald, Charles Irvin	A. & S.	Marshallton
Panaro, William	A. & S.	Wilmington
Paradise, James Anthony	A. & S.	Wilmington
Patterson, William Sylvester	E. E.	Smyrna
Phillips, John Edgar	E. E.	Delmar
Phillips, Samuel Upton	A. & S.	Delmar
Pierson, Henry Frank	M. E.	Wilmington
Pikus, Joseph	M. E.	Dover
Pippin, Leslie Larzelere	E. E.	Elkton
Powell, Arthur	A. & S.	Delmar
Prettyman, Milman Edward	A. & S.	Lewes
Pryor, James Earl	A. & S.	Clayton
Pusey, Roger Williams	A. & S.	Delmar
Raught, Roland Davis Jones	M. E.	Lewes
Rettew, Granville Raymond	Ch. E.	West Chester, Pa.
Robinson, Ralph Whiteman	A. & S.	Vineland, N. J.
Rowan, Arch Early	A. & S.	Newark
Simon, Albert	A. & S.	Wilmington
Simon, Jacob	A. & S.	Wilmington
Sline, Max	A. & S.	Wilmington
Slonsky, Alfred	A. & S.	Wilmington
Stewart, Donald Webb	A. & S.	Baltimore, Md.
Stewart, Edward Gilbert	A. & S.	Harbeson
Sweeney, Leo John	E. E.	Wilmington
Taylor, Roger Giveans	M. E.	Wilmington
Torbert, Richard Webster	M. E.	Ocean City, N. J.
Toy, Eugene Ignatius	M. E.	Wilmington
Truitt, LeRoy Burton	A. & S.	Bridgeville

VanDyke, Stanley Romaine	A. & S.	Lincoln
Weggenmann, Edward Earle	E. E.	New Castle
Yanowitz, Hyman Albert	A. & S.	Wilmington

SUMMARY

	Arts and Science	Agriculture	Engineering	Total
Senior	25	10	24	59
Junior	18	6	20	44
Sophomore	34	13	29	76
Freshman	60	7	58	125
	137	36	131	304
Graduate Students	6	7	2	15
Grand Total	143	43	133	319

THE WOMEN'S COLLEGE

Abbreviations: A. & S.—Arts and Science; Ed.—Education; H. E.—Home Economics; T. T.—Teacher Training.

SENIOR CLASS

Ayerst, Natalie Ruth	A. & S.	Elkton, Md.
Dayett, Emma Elizabeth	A. & S.	Cooch's Bridge
Deakyne, Hannah May	H. E.	Smyrna
Deen, Mary Emma	A. & S.	Preston, Md.
Gallaher, Marion Cornelia	A. & S.	Newark
Gentieu, Esther Vivian	A. & S.	Penns Grove, N. J.
Greene, Edna Elizabeth	A. & S.	Newark
Handy, Mary Noble	A. & S.	Federalsburg, Md.
Jaquette, Alice Elizabeth	Ed.	Newark
Kane, Anna Elizabeth	A. & S.	Wilmington
King, Mary Ruth	H. E.	Bridgeville
Ledenham, Emily Ruth	H. E.	Bridgeville
Leonard, Edith	A. & S.	Philadelphia, Pa.
Lynch, Nora Frances	Ed.	Kennett Square, Pa.
McCoy, Frances Romaine	H. E.	Summit Bridge
McNeal, Elizabeth Reese	A. & S.	Newark
Massey, Sara Mildred	A. & S.	Price, Md.
Moore, Willma Faye	A. & S.	Milford

Phillips, Florence Elizabeth	A. & S.	Philadelphia, Pa.
Pool, Letitia Evans	A. & S.	Middletown
Roberts, Rose Jeffries	A. & S.	Birmingham, Ala.
Roe, Emma Lucile	A. & S.	Wilmington
Roe, Sara Spencer	A. & S.	Sudlersville, Md.
Rouse, Henrietta Gertrude	A. & S.	Bel Air, Md.
Russell, Ruth Anna	A. & S.	Milford
Shorb, Helen Duval	H. E.	Dover
Smith, Mabel Elizabeth	H. E.	Hartly
Spruance, Evelyn Lydia	H. E.	Smyrna
Walker, Elizabeth Jester	A. & S.	Wilmington

JUNIOR CLASS

Beach, Helen Mary	A. & S.	Crum Lynne, Pa.
Beck, Anna Louise	H. E.	Delaware City
Black, Helen Gilmore	A. & S.	Wilmington
Burnett, Josephine Margaret	H. E.	Morristown, N. J.
Burns, Marjorie Elizabeth	A. & S.	Wilmington
Carll, Miriam Waithman	A. & S.	Camden, N. J.
Carroll, Anna Rebecca	A. & S.	Granogue
Caulk, Margaret Elizabeth	H. E.	Blackbird
Collins, Hazel Sargent	A. & S.	Newark
Cranston, Edna Everson	H. E.	State Road
Edwards, Vera Anita	H. E.	Wilmington
Elters, Viola Bertha	H. E.	Wyoming
Flinn, Alice Stirling	A. & S.	Wilmington
Garrett, Lois	A. & S.	Hockessin
Givison, Mary Jackson	H. E.	New Castle
Goodman, Jean Ursula	A. & S.	Wilmington
Hatfield, Sara Margaret	H. E.	Georgetown
Holliday, Mildred Amelia	A. & S.	New Castle
Jackson, Charlotte Louise	A. & S.	Wilmington
Jones, Frances Long	A. & S.	Seaford
Jones, Madlin Bowman	A. & S.	Laurel
Jones, Mary-Braeme	A. & S.	Seaford
McKinsey, Greta Estelle	Ed.	Wilmington
Macintire, Elizabeth	H. E.	Lewes
Moffitt, Mary Kathryn	A. & S.	Brenford
Patchell, Anna Mildred	A. & S.	Newark
Petry, Lucile	A. & S.	Selbyville
Roe, Emily Peale	A. & S.	Sudlersville, Md.
Rothrock, Katherine Regina	A. & S.	Easton, Pa.
Rush, Eleanor Anna	A. & S.	Wilmington
Vinyard, Eleanor	H. E.	Milford
Wolfenden, Mildred Everett	A. & S.	Cardington, Pa.
Worthington, Frances	H. E.	Wilmington

SOPHOMORE CLASS

Allen, Hazel Louise	A. & S.	Marion, Md.
Baker, Helen	A. & S.	Selbyville
Baker, Mary Amy	H. E.	Avondale, Pa.
Baldwin, Emily Emmarene	A. & S.	West Grove, Pa.
Black, Margaret Hodson	T. T.	Cecilton, Md.
Bradley, Mary Kathryn	H. E.	Jarrettsville, Md.
Brosius, Marjorie Cloud	H. E.	West Grove, Pa.
Burnett, Virginia Stiles	H. E.	Morristown, N. J.
Buttles, Frances Elizabeth	A. & S.	Newark
Cain, Pearl Evelyn	T. T.	Harrington
Collins, Mamie A.	T. T.	Delmar
Conaway, Mabel Elizabeth	H. E.	Greenwood
Conner, May Moren	A. & S.	Wilmington
Danks, Delma	Ed.	Winterthur
Davis, Aline	A. & S.	Laurel
Dayett, Charlotte Willits	A. & S.	Cooch's Bridge
Dougherty, Catharine Irene	A. & S.	Wilmington
Frazer, Anna Elizabeth	H. E.	Newark
Goodwin, Vesta Maria	H. E.	Washington, D. C.
Hastings, Sarah Hilda	T. T.	Salisbury, Md.
Hill, Mary Elizabeth	A. & S.	Seaford
Hudson, Gladys Elizabeth	H. E.	Georgetown
Jones, Eunity Helena	A. & S.	Dover
Kenney, Mattie Y.	T. T.	Laurel
Kite, Anna Estella	A. & S.	Wilmington
Knowles, Emma	A. & S.	Greenwood
Kramer, Ollie Leone	A. & S.	New Cumberland, Pa.
Krueger, Mary Josephine	A. & S.	Wilmington
Ladd, Kathryn Virginia	A. & S.	New Milford, Conn.
Le Fevre, Dorothy Worth	A. & S.	Ocean City, N. J.
Lucas, Helen	A. & S.	Massey, Md.
Maciejewski, Anna Mary	A. & S.	Wilmington
Moore, Pauline	H. E.	Selbyville
Neide, Marion Elizabeth	A. & S.	Yorklyn
Nunn, Dorothy Elizabeth	H. E.	Milford
Reed, Florence Alene	T. T.	Wilmington
Reed, Grace Edna	A. & S.	Hartford, Conn.
Richards, Frances Lewis	A. & S.	Greenwood
Scarborough, Miriam Elizabeth	T. T.	Elkton, Md.
Short, Anna Ruth	T. T.	Cannon
Staats, Bertha Chalfant	A. & S.	Wilmington
Staton, Sarah Elizabeth	T. T.	Dover
Stidham, Florence Maybelle	H. E.	Odessa
Tempone, Philomena Mae	A. & S.	Philadelphia, Pa.
Touhey, Margaret	A. & S.	Yorklyn
Watson, Alyce Marie	A. & S.	Laurel

Webster, Sarah Maud	T. T.	Wilmington
Wintrup, Madalin	Ed.	Wilmington
Wollaston, Mary Rebecca	T. T.	Elsmere
Workman, Conolia Blanche	T. T.	Laurel

FRESHMAN CLASS

Baker, Oda	T. T.	Harrington
Barnard, Katharine Ella	H. E.	Newark
Betts, Hester Marie	T. T.	Clarksville
Blackwell, Adele Leslie	A. & S.	Newark
Bounds, Sara Katharine	T. T.	Wilmington
Bowen, Anna Marion	T. T.	Wilmington
Bowen, Dorothy Bradford	H. E.	Lansdowne, Pa.
Brady, Clara Rebecca	H. E.	Middletown
Bullock, Mabel Ruth	T. T.	Harrington
Callaway, Sallie Ann	H. E.	Laurel
Cannon, Anna Elizabeth	T. T.	Bridgeville
Chandler, Edith Martin	A. & S.	Wilmington
Chipman, Virginia Bess	A. & S.	Georgetown
Clendaniel, Zelda Clarrissa	T. T.	Lincoln
Cohen, Helen Bertha	A. & S.	Wilmington
Cooke, Evelyn Mallalieu	T. T.	Lewisville, Pa.
Corleto, Carmela Theresa	T. T.	Wilmington
Cox, Helen Elizabeth	Ed.	Marshallton
Crooks, Anna Elizabeth	A. & S.	Newark
Davis, Alice Elizabeth	Ed.	Wilmington
Dawson, Frances Naomi	A. & S.	Wilmington
Deen, Lillian	A. & S.	Preston, Md.
Dukes, Ola Dorothy	T. T.	Millville
Edgell, Margaret Boulden	T. T.	Greenwood
Elias, Mary	A. & S.	New Brunswick, N. J.
Ewing, Delma Elizabeth	H. E.	Rehoboth Beach
Ewing, Ruth	T. T.	West Grove, Pa.
Farwood, Harriet Madeline	A. & S.	Wilmington
Francis, Mary Laura	A. & S.	Delmar
Green, Dorothy Kathleen	T. T.	Wilmington
Grim, Harriet Elizabeth	T. T.	Frankford
Harris, Louise	H. E.	Preston, Md.
Heyd, Dorothy Elizabeth	A. & S.	Felton
Hoffecker, Dorothy	H. E.	Newark
Hoffecker, Mary Canby	H. E.	Wilmington
Hulton, Blanche Virginia	T. T.	Frankford
Hudson, Fayetta	T. T.	Frankford
Jacobs, Katherine Elizabeth	H. E.	Langley Field, Va.
Jarova, Theodora	A. & S.	Trenton, N. J.
Ivy, Bella	T. T.	Wilmington
Ivy, Helen	A. & S.	Wilmington
Jockerman, Marguerite Elizabeth	T. T.	Wyoming

Loose, Lillian Mary	A. & S.	Wilmington
McSorley, Anna Rutter	T. T.	Holly Oak
Mahoney, Sara Dungan	H. E.	North East, Md.
Maloney, Gladys	H. E.	New Castle
Marvel, Henrietta Vernon	H. E.	Avondale, Pa.
Marvel, Mary Louise	A. & S.	Delmar
Massinger, Sara Houk	H. E.	Chalfont, Pa.
Mazer, Anna Frances	A. & S.	Philadelphia, Pa.
Money, Essie Annie	T. T.	Wilmington
Mullin, Mildred Louise	A. & S.	Wilmington
O'Neill, Mary Elizabeth	T. T.	Wilmington
Parry, Barbara	A. & S.	Philadelphia, Pa.
Parsons, Lenore Hastings	T. T.	Laurel
Passmore, Anna Brosius	H. E.	Chatham, Pa.
Pepper, Naomi Waples	H. E.	Georgetown
Pyle, Merrel	A. & S.	Wilmington
Quillin, Erminie Spicer	T. T.	Laurel
Ralston, Anne Marie	T. T.	Hockessin
Rice, Sarah Elizabeth	A. & S.	Felton
Rodney, Eloise	H. E.	Laurel
Rose, Marjorie Collins	H. E.	Newark
Ruston, Esther Elizabeth	T. T.	Dover
Ruston, Lillian Margaret	T. T.	Dover
Satterfield, Margaret Emily	H. E.	Harrington
Senft, Ann Adele	A. & S.	Wilmington
Sharpless, Marian Elizabeth	Ed.	Newark
Simon, Helen	A. & S.	Wilmington
Simpers, Elizabeth Dallas	T. T.	Elkton, Md.
Slaughter, Sara Rachel	A. & S.	Wilmington
Snyder, Betty Southard	A. & S.	Georgetown
Steele, Sara Frances	T. T.	Newark
Stengle, Ruth Willis	A. & S.	Wilmington
Stoll, Ruth Irma	T. T.	Wilmington
Sturgis, Dorothy Lee	A. & S.	Wilmington
Tatman, Ida May	T. T.	Bridgeville
Thompson, Bessie May	T. T.	Smyrna
Thompson, Beulah Elizabeth	A. & S.	Laurel
Thompson, Louise Whitford	H. E.	Wilmington
Thompson, Sophia Katherine	A. & S.	Wilmington
Tyler, Anner Moss	A. & S.	Newport
Vincent, Virginia Dixon	T. T.	Seaford
Ward, Jessie Dagge	T. T.	Wilmington
Webb, Mildred	A. & S.	Dover
White, Catherine Davis	T. T.	Viola
Wiggin, Georgia Edna	H. E.	Townsend
Wilkinson, Irene May	A. & S.	Wilmington
Winner, Elizabeth Marsden	H. E.	Williamsport, Pa.
Yearsley, Ruth Esther	A. & S.	Marshallton

SPECIAL STUDENTS

Charbonneau,, Marthe Elizabeth	A. & S. Bordeaux, France
Powers, Mary L.	A. & S. Newark
Skewis, Marion Elizabeth	H. E. Milford

REHABILITATION DIVISION

MAJORS

Adams, Stephen	Poultry	Erie, Pa.
Allabaugh, N. E.	Poultry	Colmar, Pa.
Antrim, Earl F.	A. H.	Pottstown, Pa.
Barrett, Peter J.	Poultry	Scranton, Pa.
Bauer, Peter C.	Horticulture	Philadelphia, Pa.
Beacher, Alfred	Poultry	Pittsburgh, Pa.
Benjamin, Harry	A. H.	Wilmington, Del.
Benzing, William	Poultry	Philadelphia, Pa.
Biddle, Harold W.	Poultry	Philadelphia, Pa.
Blackburn, Jesse L.	Gen. Agric.	Pittsburgh, Pa.
Bollman, Charles G.	Horticulture	Indiana, Pa.
Bowden, Benjamin W.	Gen. Agric.	Millsboro, Del.
Bradley, John J.	Poultry	Philadelphia, Pa.
Brant, Edward	Horticulture	Haysville, Pa.
Brant, Ephraim S.	Poultry	Johnstown, Pa.
Brown, Abe	Poultry	Pittsburgh, Pa.
Bucciarelli, Pasquale	Horticulture	Philadelphia, Pa.
Canulli, Guiseppe	Poultry	Blairsville, Pa.
Cassidy, Andrew	Poultry	Georgetown, Del.
Carey, Ward	Poultry	Wilmington, Del.
Cherry, Truman	A. H.	Albion, Pa.
Christian, Arthur A.	Horticulture	Wilkes-Barre, Pa.
Clark, Phillip	Horticulture	Chestnut Hill, Pa.
Clark, Richard	Horticulture	Philadelphia, Pa.
Cole, H. Richardson		Dover, Del.
Crader, Lewis A.	Poultry	Spring Mills, Pa.
Curry, John	Horticulture	Philadelphia, Pa.
Dare, Clifford A.	Poultry	Germantown, Pa.
De Stefano, Anthony	Horticulture	Philadelphia, Pa.
Dietterich, Ellwood C.	Horticulture	Northampton, Pa.
Dorwart, John A.	Poultry	Thompsontown, Pa.
Douglass, Edward	Horticulture	Philadelphia, Pa.
Duffy, George A.	Poultry	Rosemont, Pa.
Duffy, William E.	Gen. Agric.	Philadelphia, Pa.
Dulabone, Paul W.	Gen. Agric.	Doylestown, Pa.
Eby, Charles H.	Poultry	Delta, Pa.
Ehringer, William J.	Poultry	Philadelphia, Pa.
Else, Frank		Philadelphia, Pa.
Ent, Lambert	Horticulture	Philadelphia, Pa.

Evans, John B.	Poultry	Blakely, Pa.
Falkenburg, Clarence	Poultry	Titusville, Pa.
Fitzpatrick, Francis J.	Poultry	Holmer, Pa.
Fox, John J.	Gen. Agric.	Norristown, Pa.
Fox, Raymond A.	Poultry	White Haven, Pa.
Freas, Leon D.	Horticulture	Norwood, Pa.
Fretz, Henry S.	Poultry	Easton, Pa.
Galli, Anthony	Poultry	Bethlehem, Pa.
Gorski, William J.	Gen. Agric.	Latrobe, Pa.
Grande, Anthony F.	Poultry	Philadelphia, Pa.
Green, Melville K.	Horticulture	Linden Hall, Pa.
Griffith, Sanford R.	A. H.	Bolivar, Pa.
Grotthus, Sigmund	Gen. Agric.	Wilmington, Del.
Grundy, John	Poultry	Philadelphia, Pa.
Haas, William B.	Horticulture	Philadelphia, Pa.
Haggerty, Frank	Horticulture	Wilmington, Del.
Hahn, James		Pen Argyl, Pa.
Hall, Roy B.	A. H.	Warren, Pa.
Hallahan, Thomas	Poultry	Philadelphia, Pa.
Harrington, Harry H.	Poultry	Berwick, Pa.
Harrington, J. Harold	Gen. Agric.	Milford, Del.
Harrington, John J.	Poultry	Berwick, Pa.
Harrod, Charles H.	Poultry	Philadelphia, Pa.
Hagopian, Harry D.	Gen. Agric.	Philadelphia, Pa.
Harley, Allen G.	A. H.	Trappe, Pa.
Harrison, Henry D.	Poultry	Eldred, Pa.
Heild, George	Horticulture	Philadelphia, Pa.
Helmbreck, Earl J.	A. H.	Saegertown, Pa.
Hepler, David E.	A. H.	Hawthorne, Pa.
Hinebaugh, Ira	Poultry	Elk Lick, Pa.
Hippensteel, Robert W.	Horticulture	Carlisle, Pa.
Hopwood, Harry	A. H.	Hyland Park, Pa.
Hulfish, Franklin	Poultry	York, Pa.
Humphreys, Handel	Poultry	Edwardsville, Pa.
Hurd, Robert F.	Poultry	Milford, Del.
Hyde, James	Horticulture	Philadelphia, Pa.
Jackson, Harry E.	Horticulture	Elsemere, Pa.
Jacoby, Earl W.	Gen. Agric.	Wallis Run, Pa.
Jones, George W.	Gen. Agric.	Strickersville, Pa.
Joyce, Thomas J.	Gen. Agric.	Philadelphia, Pa.
Kaesler, Charles	Poultry	Bayonne, N. J.
Kelley, Daniel J.	Gen. Agric.	Philadelphia, Pa.
Kendall, Henry	Gen. Agric.	Wilmington, Del.
Kennedy, Samuel J.	Horticulture	Ogontz, Pa.
Konegen, John L.	Poultry	Marcus Hook, Pa.
Krall, Jonas	Poultry	Philadelphia, Pa.
Kratz, Charles	Poultry	Gloucester City, N. J.
Larocca, Charles C.		Hazelton, Pa.

Lawton, Franklin G.	Horticulture	Philadelphia, Pa.
Lewis, J. R.	Poultry	Dover, Del.
Lenze, Albert T.	A. H.	St. Marys, Pa.
Little, Orville	Poultry	Newark, Del.
Long, Robert	Horticulture	Philadelphia, Pa.
Losse, Elmer D.	Poultry	Cheltenham, Pa.
McAllister, John J.	Poultry	
McCabe, Harold	Poultry	Philadelphia, Pa.
MacDonald, Harvey		New York
McDonough, Aloysius	Horticulture	Philadelphia, Pa.
McFarland, Charles	Poultry	Tyrone, Pa.
McFeeters, John	Horticulture	Philadelphia, Pa.
McLaughlin, Raymond S.	Poultry	Erie, Pa.
McMenamin, John A.	Gen. Agric.	Philadelphia, Pa.
Marchlewski, Andres	Horticulture	Wilmington, Del.
Martin, Harry S.	Poultry	Birdsboro, Pa.
Maser, Anthony J.	Poultry	Mt. Washington, Pa.
Meuser, Joseph A.	Horticulture	Philadelphia, Pa.
Mercer, Harry R.		Newark, Del.
Michael, George E.	A. H.	Dalmatia, Pa.
Mickas, Arthur Z.	Gen. Agric.	Philadelphia, Pa.
*Millner, W. A.	Poultry	Philadelphia, Pa.
Mills, Edward C.	Horticulture	Philadelphia, Pa.
Minner, W. H.	Poultry	Edgemoor, Del.
Minor, Oscar	A. H.	Hallton, Pa.
Mixter, George W.	Horticulture	Philadelphia, Pa.
Morgan, Frank S.	Horticulture	Philadelphia, Pa.
Morkus, Anthony	Poultry	Philadelphia, Pa.
Muenzenberger, Frank A.	Poultry	Atlantic City, N. J.
Mumford, Carroll W.	Poultry	Emporium, Pa.
Mustoine, Don J.	Poultry	St. Brookline, Mass.
Nachman, Joseph	Poultry	Philadelphia, Pa.
O'Boyle, Michael J.	Poultry	Scranton, Pa.
O'Connor, Lafayette	Poultry	Philadelphia, Pa.
O'Mara, John J.	Poultry	Philadelphia, Pa.
O'Neill, Thomas L.	Poultry	Philadelphia, Pa.
Ovens, Edmund A.	Horticulture	Wilkes-Barre, Pa.
Parsons, W. E.	Poultry	Philadelphia, Pa.
Phillips, Andrew	Horticulture	Muskegon, Mich.
Phillips, John C.	Horticulture	Pottsville, Pa.
Pierce, Romaine	A. H.	Philadelphia, Pa.
Pilachowski, Adelbert	Horticulture	Marshallton, Del.
Potter, Milton G.	A. H.	Milltown, Del.
Pugsley, John T.	Poultry	Wilmerding, Pa.
Reckner, William A.	Poultry	Milltown, Pa.
Redline, John G.	Horticulture	Wind Gap, Pa.

* Deceased.

Reeder, Harry L.	Poultry	Maitland, Pa.
Rhodes, Grant J.	Poultry	Marshallton, Del.
Roberts, Jesse C.	Horticulture	Philadelphia, Pa.
Rook, Hiram A.	Poultry	Milory, Pa.
Roy, Paul L.	Poultry	Ensworth, Pa.
Salmon, Anthony	Horticulture	Pittsburgh, Pa.
Satterfield, William H.	Poultry	Philadelphia, Pa.
Schrader, Ernest P.	Gen. Agric.	Summit Bridge, Del.
Seasholtz, Robert C.	Horticulture	Ardmore, Pa.
Seaward, Garret	Poultry	Bradford, Pa.
Seeley, Lindon E.	Poultry	Ulysses, Pa.
Seimes, Erwin F.	Gen. Agric.	Wilmington, Del.
Seres, Peter	A. H.	Pittsburgh, Pa.
Sheridan, Joseph L.	Poultry	Auburn, N. J.
Shields, Michael J.	Poultry	Philadelphia, Pa.
Shimp, Henry D.	Poultry	Lewistown, Pa.
Simmons, Milton	Poultry	Pottsville, Pa.
Singer, David D.	Poultry	Clark Summit, Del.
Skinjur, Peter J.	Poultry	Kennett Square, Pa.
Slike, George W.	Poultry	Lebanon, Pa.
Slowey, Charles E.	Poultry	Scranton, Pa.
Smalley, Frederick G.	Gen. Agric.	Dunbar, Pa.
Smith, Joseph R.	Gen. Agric.	Conshohocken, Pa.
Smith, Phillip G.	Poultry	Hatboro, Pa.
Snook, Frederick A.	Poultry	Marsh Wood, Pa.
Snyder, Willis W.	Horticulture	Bangor, Pa.
Sproul, John R.	Horticulture	Wilmington, Del.
Stickel, John F.	Poultry	Delaware City, Del.
Strong, Curtis W.	Poultry	Philadelphia, Pa.
Swope, John W.	Gen. Agric.	Jonestown, Pa.
Talucci, Anthony	Poultry	East Downingtown, Pa.
Tarr, Harry J.	Horticulture	Philadelphia, Pa.
Tatem, Granville H.	Poultry	Bridgeton, N. J.
Thompson, Harold M.	Poultry	Tyrone, Pa.
Tonti, William	Poultry	Pittsburgh, Pa.
Travers, Aubury	Poultry	Allenwood, Pa.
Trumbull, Ghordis D.	Poultry	Upland, Pa.
Tully, John	Horticulture	Wayne, Pa.
Tweed, Pierce E.	Poultry	Newark, Del.
Uttley, Thomas M.	Poultry	Three Springs, Pa.
Vail, Harold M.	Horticulture	Philadelphia, Pa.
VonHofen, Paul A.	Gen. Agric.	Sewickley, Pa.
Wahl, Henry	Gen. Agric.	Philadelphia, Pa.
Walp, Andrew S.	Horticulture	Wilkes-Barre, Pa.
Webb, Dorsey L.	Gen. Agric.	Mers, Va.
Widmaier, E. P.	Poultry	Philadelphia, Pa.
Wieland, Charles H.	A. H.	Philadelphia, Pa.
Wilkes, Claude J.	Poultry	Alderson, Pa.

Wilson, Charles L.	Horticulture	Philadelphia, Pa.
Wilson, Clarence H.	Poultry	Newark, Del.
Wysocki, Alexander	Poultry	Philadelphia, Pa.
Yardley, Albert	Poultry	York, Pa.
Yocum, Clarence W.	A. H.	Beaver Falls, Pa.
Yocum, Maynard J.	Gen. Agric.	Benton, Pa.
Young, Clarence R.	Gen. Agric.	Wilmington, Del.

GENERAL SUMMARY

1922-1923

DELAWARE COLLEGE

Arts, Agriculture, Engineering	319	
THE WOMEN'S COLLEGE		
Arts, Education, Home Economics	205	
		524
Academic Extension	100	
Summer School for Teachers, 1922	328	
Rehabilitation Division, ex-Service Men	170	
		598
Total number of persons under instruction provided and directed by the University		1122

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